

TV Productor Service Manual

DATE: 2015-01-12

YOUR COMPANY NAME:

YOUR MODEL NAME:

Production & Function Description:

Action: CV512H-B42

Function: USB、HDMI、CVBS/AUDIO、PC AUDIO IN 、
VGA、ATV、COAXIAL OUT 、EARPHONE
OUT

TV System: PAL+SECAM

Approved Signatures:

Approved By Customer Project Leader	Reviewed By Project Leader	Issued By D.C.C.

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- 1. Basic Function & Specifications**
- 2. Maintenance & Safety**
- 3. Instruments**
- 4. Software Upgrade**
- 5. Main Function & Specifications**
- 6. Main board circuit diagram**
- 7. Main board service manual**

1. Basic Specifications

Working Temp: 0~40°C

Storage Temp: -20~60°C

Humidity (Working) : 10~90%

Humidity (Store) : 10~90%

LED Lifespan (50 Lum, Tube current < Rating) : 60000 hour (II=4.5Ma 25°C)

MTBF:50000 hour (Panel Module NOT included)

Power requirement: Voltage 100~240 V 50 / 60 Hz

(Note: The above specifications are suitable for most of the TV models, and for your reference only.)

2. Maintenance & Safety

2.1 Safety Warning:

(1) The inside key components in the LED must be offered and replaced by qualified and

appointed manufacturer. Otherwise it may generate electricshocks, fires or other important unsafety cases.

(2) Don't try to change the circuits without authorized permission.

(3) Ensure to study the maintenance and service manual thoroughly before doing any of the maintaining actions.

2.2 High Voltage Warning:

Please be highly noted the high voltages in the circuit.

2.3 Electricshocks and Fires Warning:

*Connect the insulate transformer between the AC current to the LED before repairing the panel.

*Take care of the Soldering Pad related to the high voltage circuit. When there occurs

short-circuit case, please replace the overheated components in time.

*All protective equipments must be re-installed according to the original design.

*Check the rosin joints, stack welds and the insulations, ensure there is no objection attached.

2.4 Antistatic Warning:

*The inner circuit boards in the LED TV are sensitive to the statics. Please take care of the

ESD protection when replace the circuit boards.

*The circuit boards must be packed by antistatic bags.

*Please wear antistatic ring and gloves when during repairing works.

2.5 Attention:

LVDS VDD – if the LED is in 5V, it must be switched to the setting of 5V. And if the LED is in 12V, it must be switched to the setting of 12V. (Switch setting: CN9 -- 5V or 12V)

3. Instruments

3.1 Multimeter:

Max Input Current : over 1A / Max Input Voltage : 500Vdc

Measurement Range : 10Mvr~100Vdc / Accuracy : 0.03%

3.2 Oscilloscope

Frequency Band : over 20M /Input Impedance : over 1M

Input Capacitance : below 30pF / Max Input Voltage : 250V

3.3 PC: XGA (1024X768@60Hz)

3.4 HD Singal Generator: 480P 576P 720P 1080i@50/60HZ

3.5 DVD Player: Audio/Video output, S-VIDEO output, HDMI output.

3.6 VGA cable, S-VIDEObable, RCA cable, YpbPr cable and HDMI cable.

4. Software Upgrade

The chip inside the LED is designed with a FLASH ROM memory program:
it can be erased

and reprogrammed, it can be also updated via the USB port. the program is related to the chip fuction ---Different functions of chips need to be planted with different versions of prgrams.

Please ugrade the new software by the USB port the instruction steps below:

-----Please copy the new software to the USB

-----Power ON the TV and press MENU to display the main menu ,then press / to the

OPTION menu. And then select the software in the root of your USB memory , Press ENTER .then press to update and to cancel.

Remarks: When the first upgrading is finished, the action of turning on the tv will be a little slow. So when you turn on the TV at the first time, you need to press the "power" key on the remote control several times until you turn on the tv. Turning on the TV at the first time is very important, you need to operate it carefully to avoid the upgrading is not successful.

LED TV CONTROL BOARD SPECIFICATION

MODEL : CV512H-B42-12

Approved by Cultraview		Approved by Customer	
AUTHOR :	Jun Yi	Comments :	
CHECKED BY :		CHECKED BY :	
APPROVED BY :		APPROVED BY:	
DATE:		DATE:	
Company's seal:			

Please return us one original approved by you with your signatures.

客户承认签章后敬请寄回正本一份

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THE CHANGE LIST OF UPGRADES (升级变更列表)

Version	Description	Page	Redaction	Checked	Date
V1.0	First Release	ALL	Jun Yi		Au.29.2014
V1.1	Update the picture, change double USB to single USB	P6-7	Lirong chen		Dec,02,2014

1. GENERAL DESCRIPTION (概述)

- **CV512H-B42-12's** power part is an energy-efficient ultrathin DC-line switching power supply unit, with max 95W/115VAC input, 75W output. It fits to 42" LED backlight panel.

CV512H-B42-12 方案的电源部分为高效率开关电源，最大输入功率为95W/115VAC，总输出功率为75W，支持42寸LED背光屏。

- **CV512H-B42-12** is a digital and analogue TV board, it can receive the analogue television (PAL/SECAM) and digital television (DVB-T/T2/C/S2) signal. It is suitable for the market in Europe (include UK), Australia etc.

CV512H-B42-12是数模一体电视主板，它可以接收模拟电视(PAL / SECAM)和数字电视(DVB-T /T2/ C/S2)信号。适用于欧洲（包括UK），澳洲等市场。

- Supports DVB-T MPEG-4 extended ASP up to 1080p@30fps.
支持DVB-T MPEG-4 扩展ASP到1080p@30fps。
- Supports H.264 MP/HP@L4.1 for SD and HD decoding.
支持 H.264 MP/HP@L4.1 SD 和 HD 解码。
- Supports USB 2.0 multimedia play, supports audio and video play; supports txt and picture browse.
支持USB 2.0多媒体播放，支持音频和视频播放；支持文字、图片浏览。
- Analogue and digital HD port input signal largest support 1080P.
模拟和数字高清端口输入信号最大支持1080p。
- Support analogue & digital 1000 Pages Teletext.
支持模拟与数字 1000 页图文。
- The largest support various TFT-LCD 1920x1080 resolutions module.
最大支持各种TFT-LCD 1920x1080分辨率模块。
- The HDMI supports 1.4a, the HDCP supports 1.1.
HDMI 支持1.4a，HDCP支持1.1。
- Support three HDMI input, and the first channel can support ARC function, the second channel can support MHL function.
支持3路HDMI输入，第一个通道可支持ARC，第二个通道可支持MHL功能。

- 3-D video noise reduction.
支持3D视频降噪。
- Enhanced motion adaptive 3D Y/C separation comb filter for NTSC/PAL system.
增强动态自适应3D Y/C分离梳状滤波器的NTSC/PAL系统。
- Supports USB update.
支持USB升级
- Supports Video SDTV at 480i/576i and 480p/576p.
支持视频480i/576i 和480p/576p的标清电视。
- Supports Video HDTV at 720P and 1080i and 1080P.
支持视频720P、1080i 和1080P的高清电视。
- Supports PC RGB input up to UXGA@60Hz(165MHz).
PC RGB输入最大支持UXGA@60Hz(165MHz)。
- Reliable EMC and ESD handle
可靠的 EMC 和防静电处理

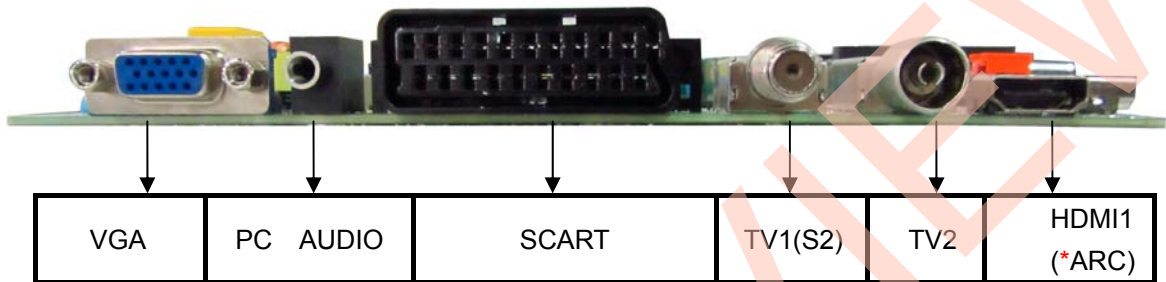
2. PICTURES (主板端口图片)

The optional function are marked with “*” .

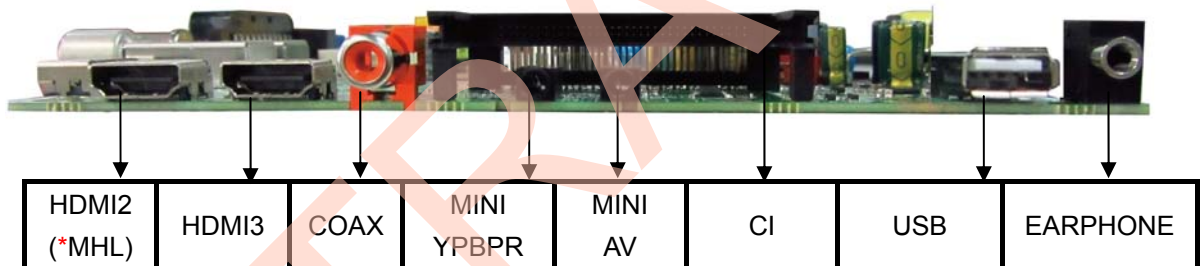
带“*”为可选功能，默认不带

Europe Board Type (欧洲版型):

FRONT VIEW (前视图)

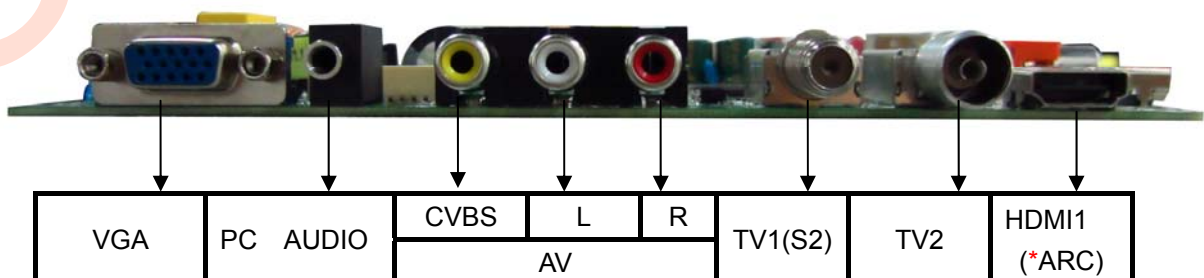


SIDE VIEW (侧视图)

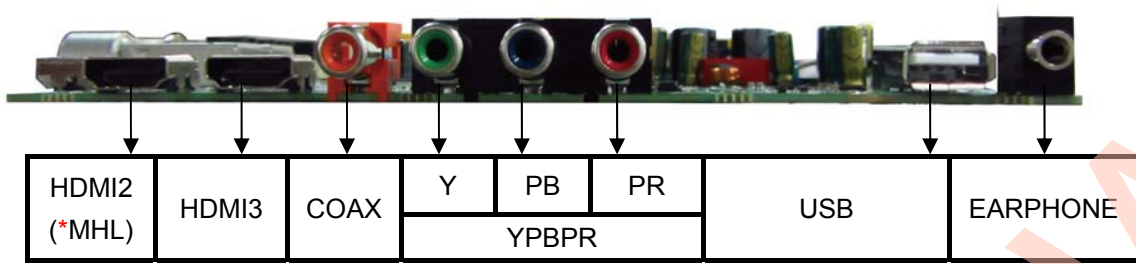


Australia Board Type (澳洲版型):

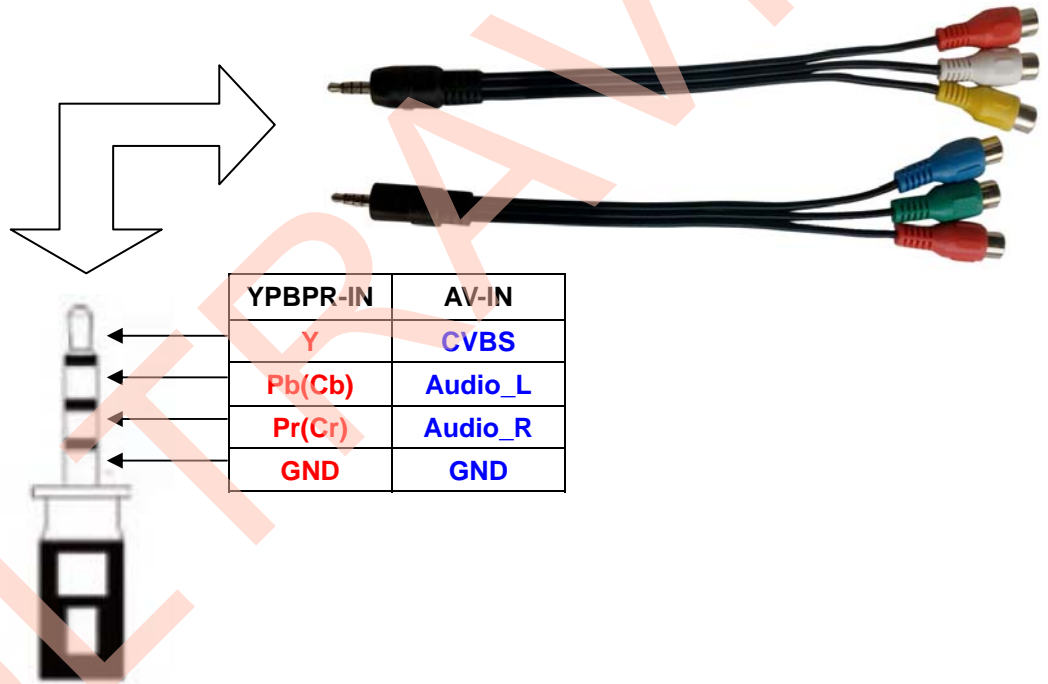
FRONT VIEW (前视图)



SIDE VIEW (侧视图)



EXTERNAL CONNECTORS



3. FEATURES (特性说明)

PANEL	Type (类型)	TFT-LCD/LED
	Resolution (最大分辨率)	Max. 1920X1080
	Interface (接口)	Single/ Double LVDS
	Voltage (电压)	5V, 12V
ATV	Receiving range (接收范围)	48.25MHz – 863.25MHz
	Input Impedance (输入阻抗)	75Ω
	Video System (视频制式)	PAL ,SECAM ,NTSC
	Sound System (声音制式)	BG, DK, I NICAM/A2
DTV	Receiving range (接收范围)	VHF (174MHz – 230MHz) UHF (474MHz - 862MHz)
	Input Impedance (输入阻抗)	75Ω
	Bandwidth (带宽)	7MHz/8MHz
	Modulation (调制)	DVB-T:COFDM QPSK, 16QAM, 64QAM
		DVB-T2: COFDM QPSK, 16QAM ,64QAM , 256QAM
		DVB-C:16QAM, 32QAM, 64QAM, 128QAM, 256QAM DVB-S2: QPSK, 8PSK
	Video System (视频制式)	MPEG-2 MP@ML, MPEG-2 MP@HL, H.264
Sound System (声音制式)	MPEG-1 Layer 1/2, MPEG-2 Layer 2, DD, DD+	
RGB	Video Level (视频信号幅度)	0.7Vp-p@75ohm
	Format (格式)	Max UXGA@60Hz
AV	Color system (彩色制式)	PAL/NTSC/SECAM
	Video Level (视频信号幅度)	1Vp-p@75ohm
YpbPr	Video Level (视频信号幅度)	Y:1Vp-p@75ohm, PbPr:0.7Vp-p@75ohm
	Format (格式)	480i, 480p, 576i, 576p, 720p, 1080i, 1080p
HDMI	Format (格式)	480i, 480p, 576i, 576p, 720p, 1080i, 1080p
SCART	Video (视频)	CVBS&RGB input, CVBS output

SCART	Video output/input (视频输出/输入)	RGB: 0.7Vp-p@75ohm	
		CVBS: 1Vp-p@75ohm	
	Audio output/input (音频输出/输入)	500mVrms	
AUDIO INPUT	PC Audio	Audio Level	0.2----2 Vrms
	CVBS Audio		
	Component audio		
AUDIO OUTPUT	Max Output Power (最大输出功率)	2 X8W @ 8ohm THD<10%	
Keyboard	Power, Menu, Source, CH+, CH-, VOL+, VOL- 电源, 菜单, 信号源, 频道+, 频道-, 声音+, 声音-		

4. PRESET MODE FOR USB (USB 多媒体支持格式)

USB FORMAT MODE

Media (媒体)	File Exit. (扩展名)	Codec (编码解调器)		Remark
		Video (视频)	Audio (音频)	
MOVIE	.avi	MJPEG	MP3, WMA, AAC,PCM (AC3 Need license)	The Max Resolution And Frame Rate: 1280X720@30fps Max Data Rate: 20 Mbps
		Xvid,MPEG-4,H.264, WMV9/VC-1 (Divx Need license)		
	.mp4/ .mpeg4	MPEG-2,MPEG-4,H. 264,Xvid,MJPEG	MP3, AAC,PCM (AC3 Need license)	The Max Resolution And Frame Rate:1080p@30fps Max Data Rate: 20 Mbps
		.ts/ .trp	MPEG-1,MPEG-2,H. 264,VC-1	
.mpg/ .mpeg	MPEG-1,MPEG-2	MP1/MP2/MP 3,AAC,PCM (AC3 Need license)		

MOVIE	.mkv	MPEG-2/4,H.264, Xvid,RV30,RV40,VC-1 (Divx Need license)	MP3,AAC, PCM,COOK (AC3 Need license)	The Max Resolution And Frame Rate:1080p@30fps Max Data Rate: 20 Mbps Resolution: 800x600(RV30) 1280x720(Rv40)
	.mov	MPEG4,H264,MJP EG	MP3,AAC,PC M,AMRNB	
	.dat	MPEG-1	MP1	
	.vob	MPEG-2	MP1/MP2/MP 3,PCM (AC3 Need license)	
	.rm/ .rmvb	RV30,RV40	AAC,COOK	
PHOTO	.jpg	Progressive DCT		Max Resolution: 1920×1080
	.jpeg	Baseline DCT		Max Resolution: 7680×4320
	.bmp	----		Max Resolution: 1920×1080 Pixel Depth: 8/24/32 bit
	.png	----		Max Resolution: 1920x1080
MUSIC	.mp3	----	MP3	Sample Rate: 32K~48KHz
	.wmv	---	PCM	Bit Rate: 32K~320Kbps Channel: Mono/Stereo
	.mp4/ .aac/ .m4a	---	AAC	Sample Rate: 8K~48KHz Bit Rate: 24K~384Kbps Channel: Mono/Stereo
TEXT	.txt	ANSI/UNICODE GB/UTF8		File Size: Max 10MB

Note:

1) This product includes the following optional patented technologies : Dolby, DIVX, SRS , etc. If you need to use these patented, please provide the patent license to us, so that the product can meet your requirements.

(此产品包括如下可选的专利技术: DOLBY、DIVX、SRS 等, 如您需要开通这些功能, 请提前提供相关专利许可给到我司, 以便产品能满足您的要求。)

- 2) USB only support PHOTO, MUSIC and MOVIE. The system automatically classified files, only show the supported files.
- 3) Support hard disk, the maximum storage capacity is 1T.
- 4) Photo non-support EXIF format.
- 5) Flash non-support animation.
- 6) Support for text files.

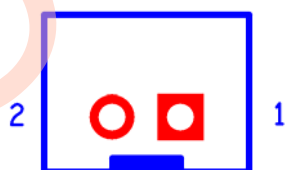
5. ELECTRICAL CHARACTERISTICS (电气特性)

5.1 Input Electrical Specifications(输入特性)

Input	Minimum	Nominal	Maximum	Unit
Voltage	90	115/230	264	Vac
Current	—	—	2.0	A
Frequency	47	50/60	63	Hz
Efficiency	≥80%min(Full load with input AC voltage of 115Vac @ 60Hz and 230Vac @ 50Hz)			
Standby Power Consumption	≤0.5W At 240Vac input and no load condition			
Inrush current	Cannot be damaged components			
Leakage Current	Less Than 0.35mA, 240Vac input			
Input Fuse	T3.15A/250VAC			

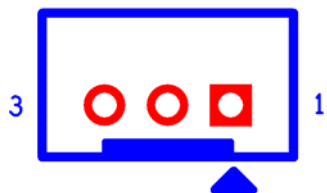
5.2 LED Driver Power Output Connector& out put characteristics (LED 背光供电控制接口与输出特性)

PJ5/PJ6: 2PIN-2.0



NO	Definition	Voltage(Volts)			Current(mA)		
		Min	Nom	Max	Min	Nom	Max
1	V+	80	85	90	480	500	520
2	V-	/			/		

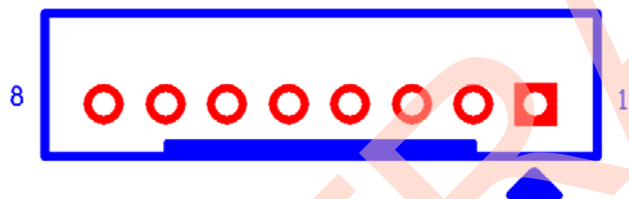
PJ3/PJ4: 3PIN-2.0



NO	Definition	Voltage(Volts)			Current(mA)		
		Min	Nom	Max	Min	Nom	Max
1	V+	80	85	90	480	500	520
2	V-	/			/		
3	V-	/			/		

备注：采用单路总恒流

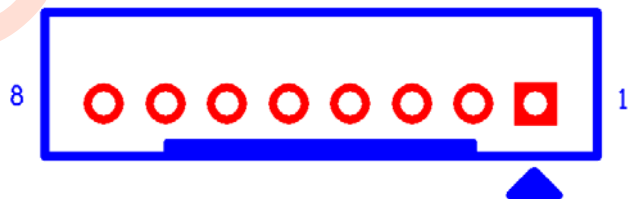
PJ2: 8PIN-2.0



NO	Definition	Voltage(Volts)			Current(mA)		
		Min	Nom	Max	Min	Nom	Max
1	V+	/	/	/	/	/	/
2	V-	/			/		
3	V+	/	/	/	/	/	/
4	V-	/			/		
5	V+	/	/	/	/	/	/
6	V-	/			/		
7	V+	/	/	/	/	/	/
8	V-	/			/		

备注：采用单路总恒流。

PJ1: 8PIN-2.0



NO	Definition	Voltage(Volts)			Current(mA)		
		Min	Nom	Max	Min	Nom	Max
1	V+	/	/	/	/	/	/
2	V+	/	/	/	/	/	/
3	V+	/	/	/	/	/	/
4	V+	/	/	/	/	/	/
5	V-	/			/		
6	V-	/			/		
7	V-	/			/		
8	V-	/			/		

备注：采用单路总恒流。

6. PROTECTION CAPABILITY (保护性能)

LED Short Protection: (LED 短路保护)

Auto restart (自动恢复)

LED Open Protection: (LED 开路保护)

Shut down or auto restart (关断或自动恢复)

Fuse protection (保险丝过流保护)

The Fuse inside the power supply shall open when the AC input current is over the rated current of fuse. This Fuse protection will cause switching power supply to fail.

(当 AC 输入电流超过电源内置保险丝的额定电流时，保险丝必须熔断，呈开路状态，保险丝保护启动后电源将不能启动。)

7. INTERNATIONAL STANDARDS (国际标准)

EMI standards (EMI 标准)

The power supply shall compliance with the following radio disturbance Criterion.

该电源应符合下列无线电干扰标准。

Sound and television broadcast receivers and associated equipment

EN55013	Sound and television broadcast receivers and associated equipment radio disturbance characteristics limits and methods of measurement
GB13837	声音和电视广播接收机及有关设备无线电干扰特性限值 and 测试方法
FCC CFR 47 Part 15 subpart B 美国联邦通信法规第 47 卷 15 章内无意式的辐射器材的相关规定	

EMS standards (EMS 标准)

➤ Electrostatic Discharge Immunity Test: IEC-1000-4-2 8KV, Criteria B

(防静电测试标准: IEC-1000-4-2 touch discharge $\pm 4KV$, air discharge $\pm 8KV$, Criteria B)

➤ EFT/Burst Immunity Test: IEC-1000-4-4 1KV, Criteria B

(快速脉冲群测试标准: IEC-1000-4-4 1KV, Criteria B)

Safety Compliance (安规依据)

Design to meet : IEC60950 / 2005; IEC60065

(设计依据: IEC60950 / 2005; IEC60065)

Isolation (绝缘性能)

Insulation resistance (绝缘阻抗)

Input To Output	DC500V 50MΩmin (at room temperature)
Input To PG	DC500V 50MΩmin (at room temperature)
Insulation voltage (绝缘耐压)	
Input To Output	3000Vac 50Hz 1minute ≤10mA
Input To PG	1500Vac 50Hz 1minute ≤10mA

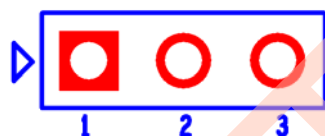
8. INTERFACE DEFINITION (接口定义)

All jacks recognize the square pad as first pin.

The optional connectors and terminals are marked with “*” .

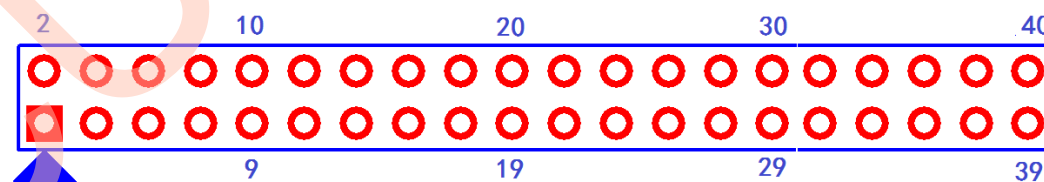
带“*”为可选连接器和端子

J9 (1x3PIN/2.54mm): PANEL POWER SUPPLY (屏电源)



NO.	SYMBOL	DESCRIPTION
1	+12V	+12V Panel Power Supply
2	VCC	Panel Power Supply
3	+5V	+5V Panel Power Supply

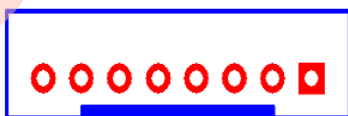
J10 (2X20pin/2.0mm): LVDS INTERFACE (LVDS 接口)



NO.	SYMBOL	DESCRIPTION
1	VCC	Power Supply for Panel
2	VCC	Power Supply for Panel
3	VCC	Power Supply for Panel
4	GND	Ground
5	GND	Ground

6	GND	Ground
7	RXO0-	LVDS ODD 0- Signal
8	RXO0+	LVDS ODD 0+ Signal
9	RXO1-	LVDS ODD 1- Signal
10	RXO1+	LVDS ODD 1+ Signal
11	RXO2-	LVDS ODD 2- Signal
12	RXO2+	LVDS ODD 2+ Signal
13	GND	Ground
14	GND	Ground
15	RXOC-	LVDS ODD Clock- Signal
16	RXOC+	LVDS ODD Clock + Signal
17	RXO3-	LVDS ODD 3- Signal
18	RXO3+	LVDS ODD 3+ Signal
19	RXE0-	LVDS EVEN 0- Signal
20	RXE0+	LVDS EVEN 0+ Signal
21	RXE1-	LVDS EVEN 1- Signal
22	RXE1+	LVDS EVEN 1+ Signal
23	RXE2-	LVDS EVEN 2- Signal
24	RXE2+	LVDS EVEN 2+ Signal
25	GND	Ground
26	GND	Ground
27	RXEC-	LVDS EVEN Clock- Signal
28	RXEC+	LVDS EVEN Clock + Signal
29	RXE3-	LVDS EVEN 3- Signal
30	RXE3+	LVDS EVEN 3+ Signal
31	GND	Ground
32	GND	Ground
33	ON-PBACK	Backlight ON/OFF control
34	ON-PANEL	Panel power ON/OFF control
35	SCL	IIC SCL
36	SDA	IIC SDA
37	RXO4-	LVDS ODD 4- Signal
38	RXO4+	LVDS ODD 4+ Signal
39	RXE4-	LVDS EVEN 4- Signal
40	RXE4+	LVDS EVEN 4+ Signal

*J15 (8pin/2.0): DVD POWER&CONTROL (DVD 电源控制接口)



NO.	SYMBOL	DESCRIPTION
1	DVD_STB	DVD STANDBY
2	DVD_AUTO	DVD AUTO

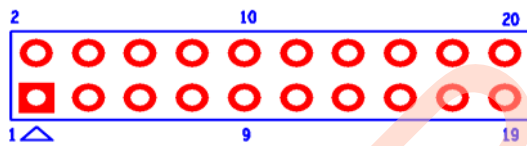
3	DVD_IR	IR Data Transfer to DVD
4	+12V	+12V DC Power Supply for DVD
5	GND	Ground
6	GND	Ground
7	+5V	+5V DC Power Supply for DVD
8	+5V	+5V DC Power Supply for DVD

J1 (4PIN/2.54): SPEAKER CONNECTOR (喇叭输出接口)



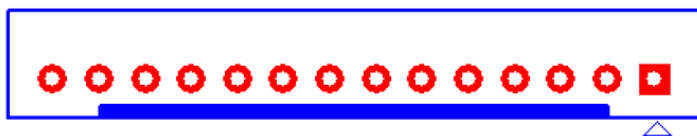
NO.	SYMBOL	DESCRIPTION
1	R+	Audio R+ Channel Output
2	R-	Audio R- Channel Output
3	L-	Audio L- Channel Output
4	L+	Audio L+ Channel Output

***J14(2×10PIN/2.0) : INTRENAL HDMI CONNECTOR (内置 HDMI 接口)**



NO.	SYMBOL	DESCRIPTION
1	Data2+	HDMI 2+ Signal
2	Data2-	HDMI 2- Signal
3	Data1+	HDMI 1+ Signal
4	Data1-	HDMI 1- Signal
5	Data0+	HDMI 0+ Signal
6	Data0-	HDMI 0- Signal
7	Clock+	HDMI Clock+ Signal
8	Clock-	HDMI Clock- Signal
9	HDMI_SCL	HDMI DDC IIC SCL
10	HDMI_SDA	HDMI DDC IIC SDA
11	GND	Ground
12	GND	Ground
13	HDMI+5V	HDMI +5V DC Power Supply
14	HPD	HDMI Hot Plug Detect
15	GND	Ground
16	GND	Ground
17	CEC	CEC Signal
18	+5V	+5V DC Power Supply
19	SCL	Main IIC SCL
20	SDA	Main IIC SDA

J17 (14pin/2.0): KEY&IR&LED CONNECTOR (按键、遥控和指示灯控制接口)



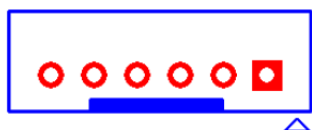
NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	K7	Key7(Reserved)
3	POWER	POWER
4	VOL+	VOL+
5	VOL-	VOL-
6	INPUT	INPUT
7	CH+	CH+
8	CH-	CH-
9	MENU	MENU
10	GND	Ground
11	IR	IR Receiver
12	LED_G	Green Indicator
13	LED_R	Red Indicator
14	+5V	+5V DC Power Supply

***J16 (11pin/2.0): INTERNAL YPBPR INPUT CONNECTOR (内置 YPBPR 输入接口)**



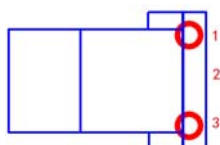
NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	Y	YPbPr-Y Input
3	GND	Ground
4	Pr	YPbPr-Pr Input
5	GND	Ground
6	Pb	YPbPr-Pb Input
7	LIN	Left Channel Input
8	GND	Ground
9	RIN	Right Channel Input
10	GND	Ground
11	NC	NC

J6 (6PIN/2.0/红色): INVERTER CONNECTOR (背光接口)



NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	Ground
3	ADJ	Brightness Adjustment for Panel(Volts DC Output)
4	ON/OFF	Back-Light ON/OFF Control for Panel (1: ON/0: OFF)
5	+12V	INVERTER +12V DC Power Supply
6	+12V	INVERTER +12V DC Power Supply

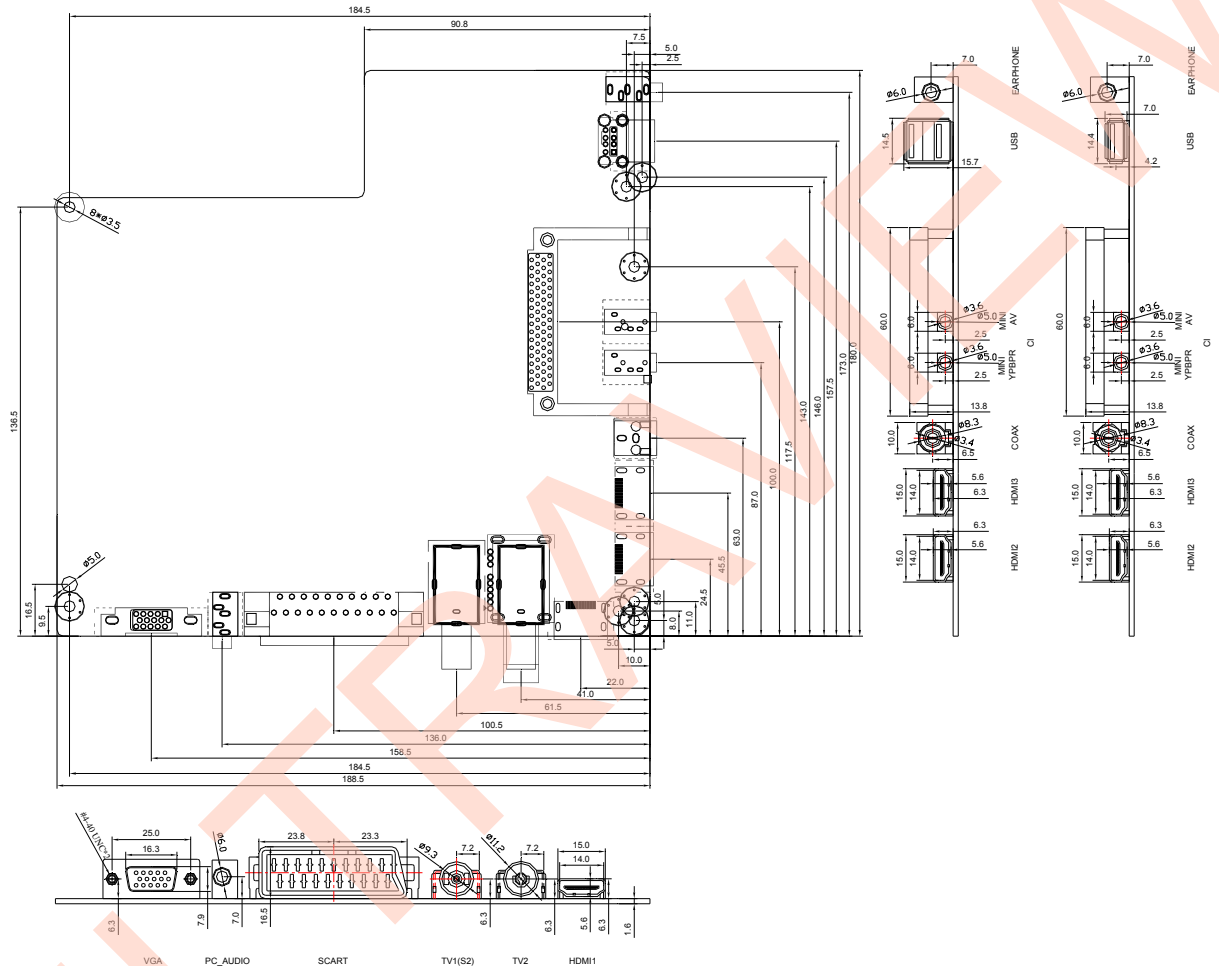
PCON1: AC INPUT CONNECTOR (交流输入接口)



NO.	SYMBOL	DESCRIPTION
1	L	LIVE (火线)
2	NC	NC
3	N	NEUTRAL (零线)

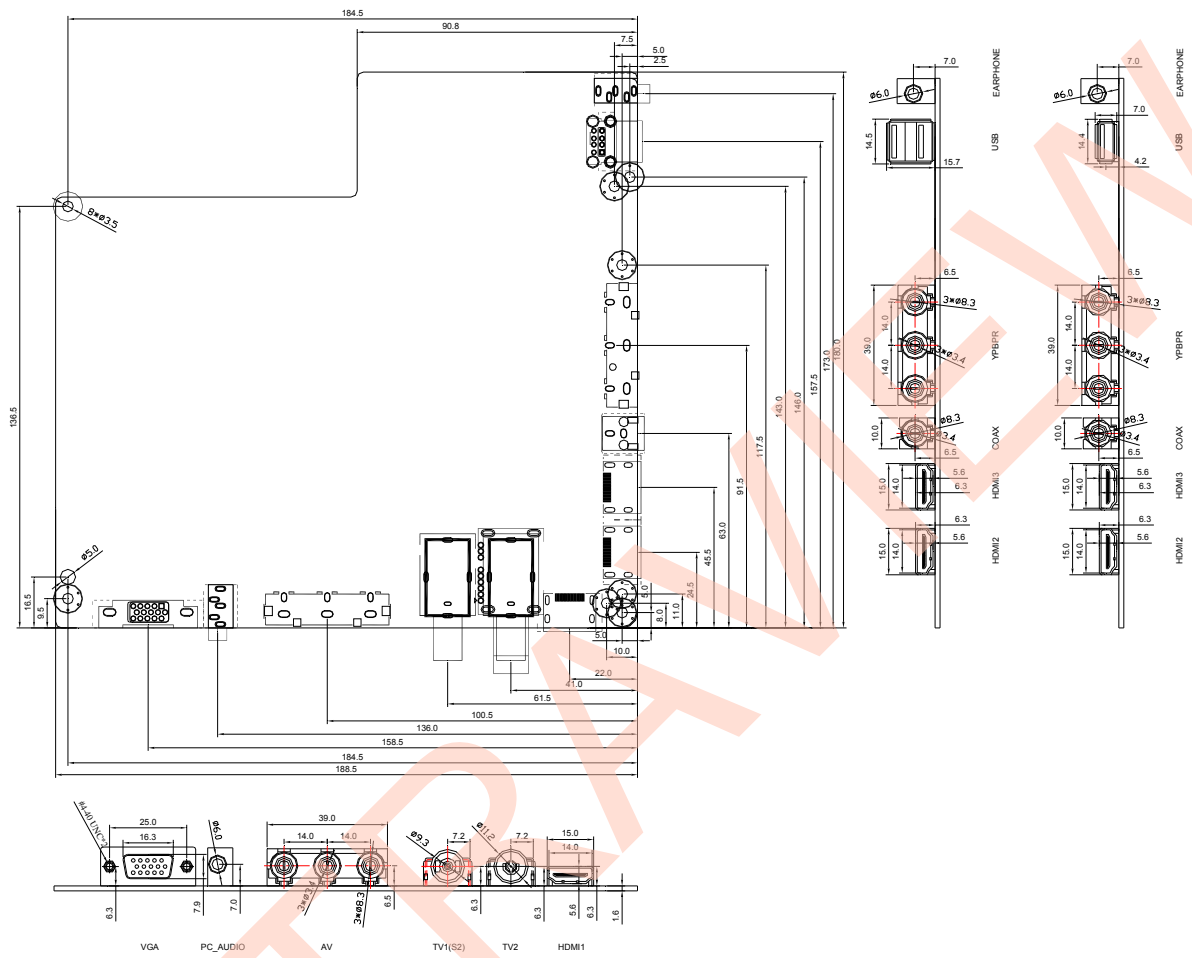
9. MECHANICAL DIMENSION (结构尺寸图)

Europe Board Type :



The thickness of PCB board: 1.6 mm
 Component the tallest altitude: 16.5mm
 Install diameter inside the bore 3.5 mm

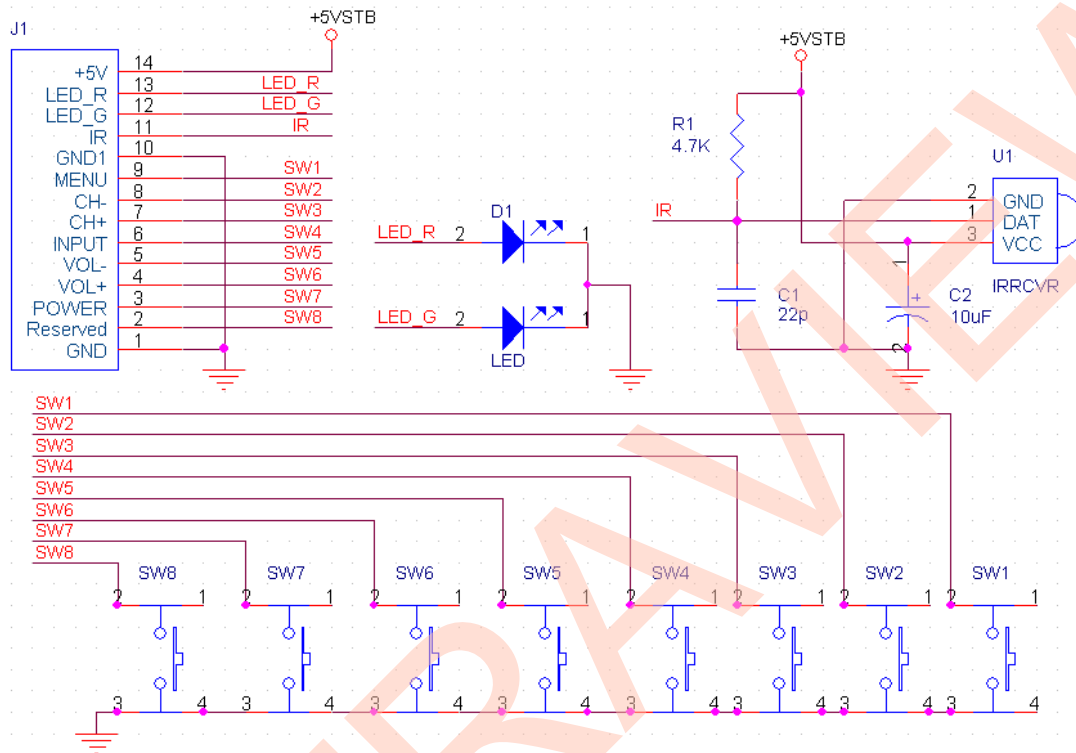
Australia Board Type:



The thickness of PCB board: 1.6 mm
 Component the tallest altitude: 16.5mm
 Install diameter inside the bore 3.5 mm

10. SCHEMATICS OF IR BOARD & KEY BOARD

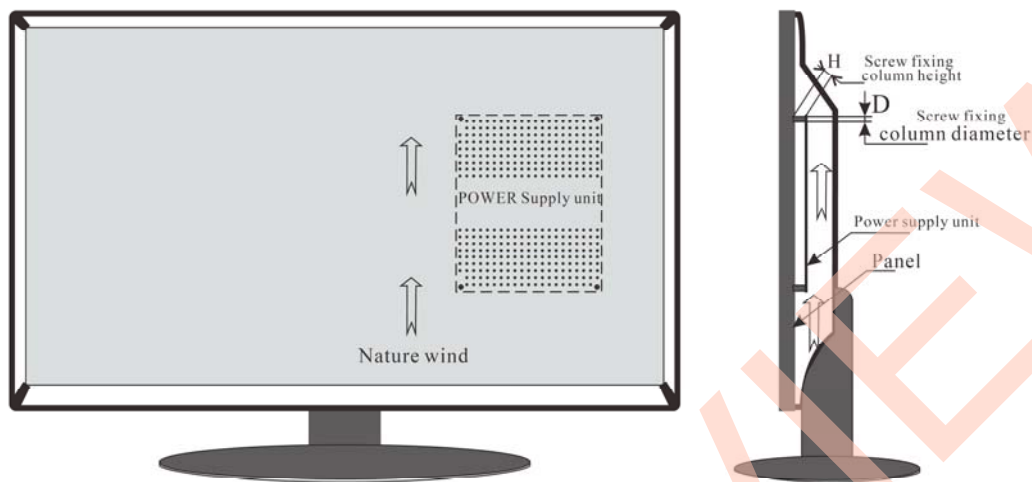
(遥控和按键原理图)



11. APPLICATION REQUIREMENT (应用注意事项)

- Relative humidity ≤80%
相对湿度≤80%
- Store temperature -10~+60 °C
存储温度-10~+60 °C
- Use temperature 0~+40 °C
使用温度 0~+40 °C
- The procedure of the whole machine assembles and transports need to attend ESD transaction.
整机装配和运输过程中需要注意 ESD 保护。
- The hole of each port does not be opened too small, especially the HDMI port hole, avoid the whole set morphing to cause the extrusion of port when installing.
每个端口的开孔不应开得太小,尤其是 HDMI 端口,避免装配挤压导致端口变形。
- The hole of RGB socket is recommended the situation of not using the screw stationary on the RGB socket to fix on the structure board.
VGA 端口上的螺丝柱建议是不使用螺丝固定到结构挡板上。
- The connected wire which between the other boards and this board can't be leaded too long, or affect performance and image quality.
其他外接模块与电视主板的连接线长度不要太长,以免影响性能和图像质量。
- The whole set inner wires matching reasonable, each connected wire try to not directly cross the PCB board, especially cross over from the main IC and power module, avoid affect the whole set EMC performance.
整机内部线材装配要合理,各连接线尽量不直接穿过 PCB 主板,尤其是横跨主芯片和电源模块,避免影响整机的 EMC 性能。
- in order to obtain better EMC effect of the whole set, we suggest the LVDS twisted pair wire between the main board and panel must be tied up well and try to use shielding wire. If it's possible, try to put on the magnetic belt ring on the wire which near the board terminal.
为了获得更好的整体 EMC 效应,我们建议主板和面板之间的 LVDS 双绞线必须绑好,尽量使用屏蔽线。如果可能的话,尽量把磁环放在靠近主板端。
- The HDMI and HDCP on the main board are all passed the related certifications, but we just provide testing certification of the inner usage standard. If you need to use legal HDMI and HDCP, please apply related association as formal member by yourself.
主板上的 HDMI 和 HDCP 已通过了相关的认证,但我们只提供内部使用的标准的测试认证。如果您需要使用合法的 HDMI 和 HDCP 认证,请先成为相关协会的会员。
- There is ROHS identification on the board and package, the board match ROHS standard.
主板和包装带都符合 ROHS 标准。

12. MOUNT PRECAUTIONS (组装注意事项)



Note1: The H should be greater than or equal 9mm, otherwise you must add the mylar under PCB bottom.

H的高度必须大于等于9mm,如果小于9mm,则必须在PCB底层加麦拉片绝缘。

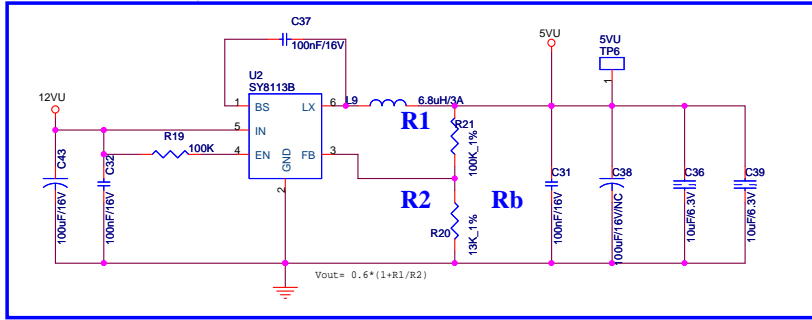
Note2: The D should be less than 8mm. Mount the power supply unit to the screw fixing column using M3 screw. The maximum value of the tightening torque is 0.4N-M.

D的直径须小于8mm,将电源锁在螺丝柱上需使用M3的螺丝。最大扭矩为0.4N-M。

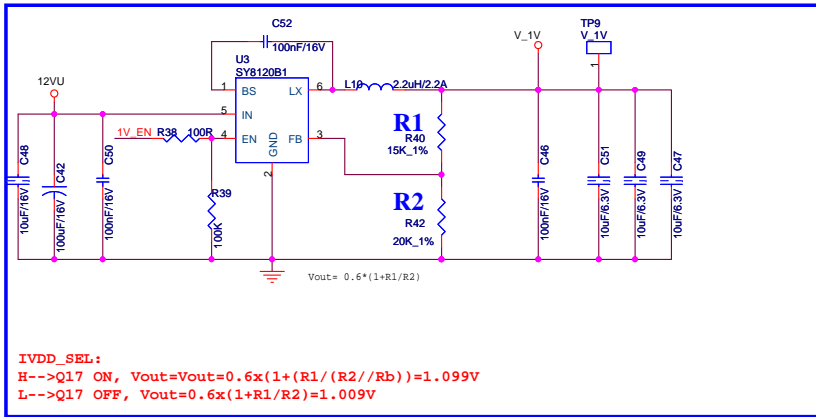
Note3: The Power supply unit is usually designed without the case. Please take care about ESD at anytime.

因为本产品为无外壳之设计,故在任何时候均应注意静电防护。

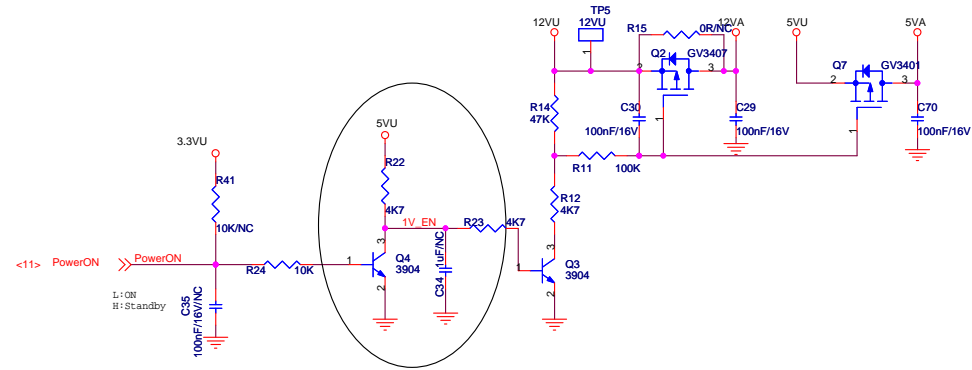
+5V_Standby POWER 3A



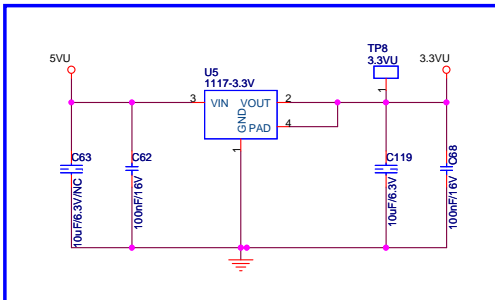
1V System Power 2A



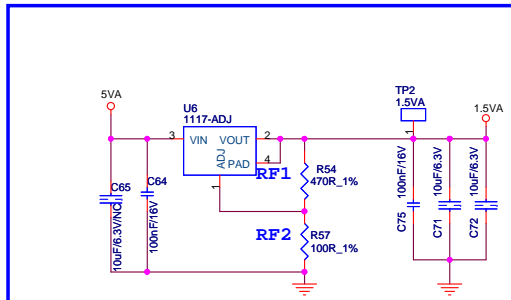
5V & 12V Switch Power



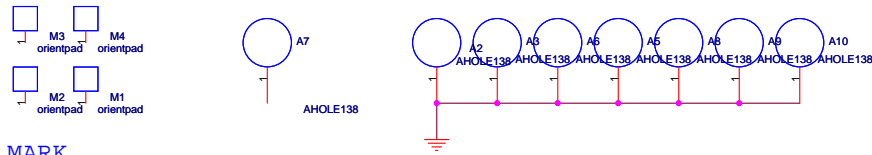
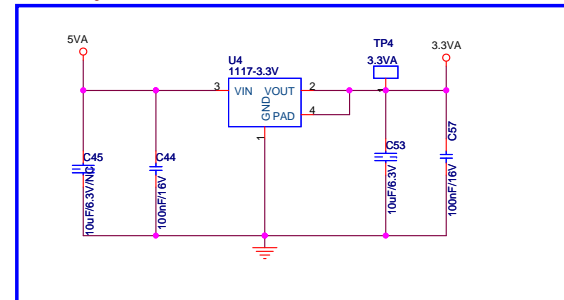
+3.3V STANDBY POWER



1.5V DDR Power

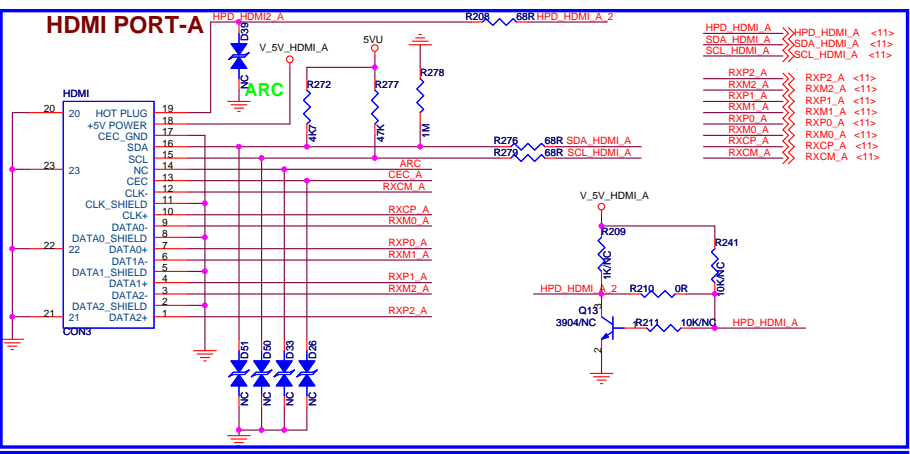


3.3V System Power

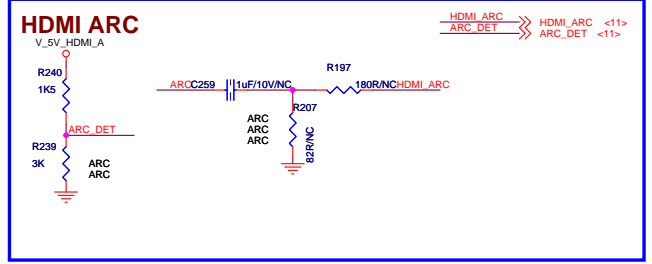


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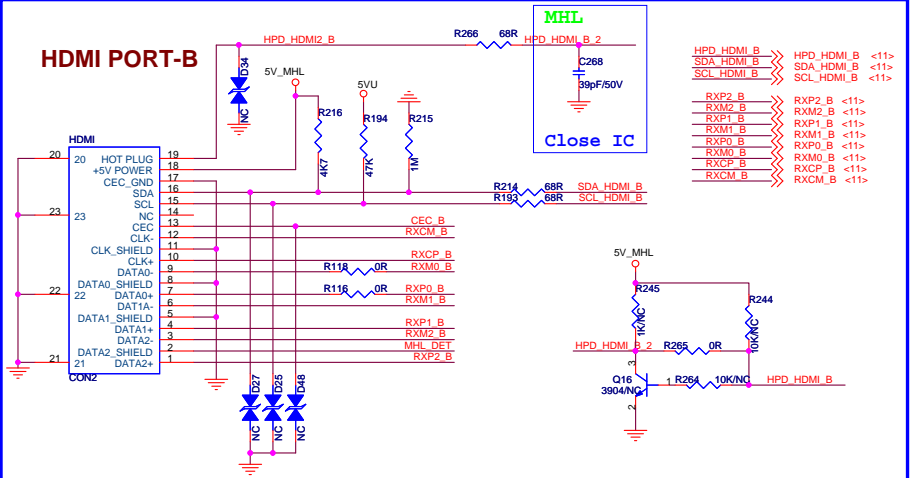
HDMI PORT-A



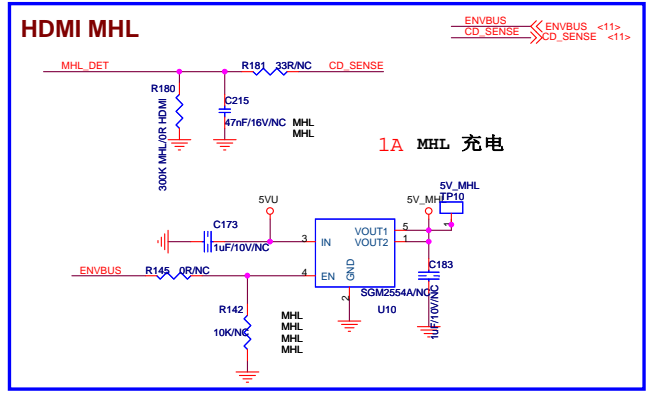
HDMI ARC



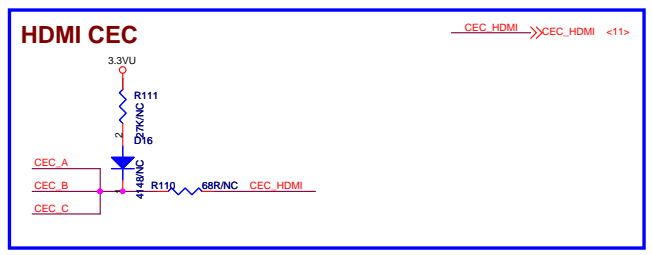
HDMI PORT-B



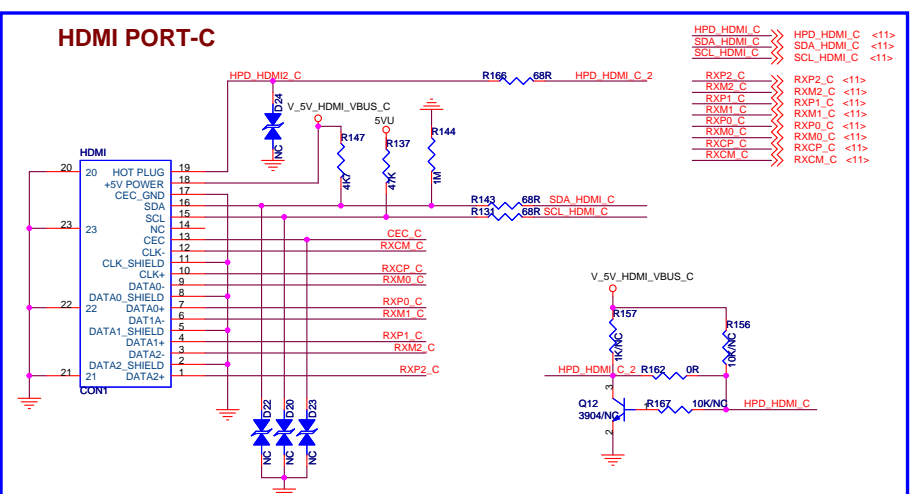
HDMI MHL



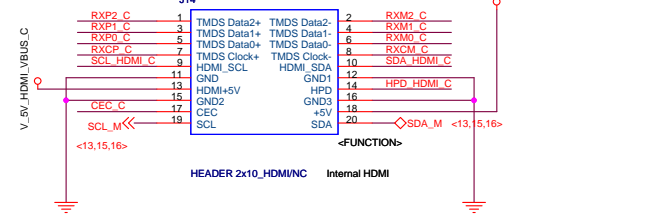
HDMI CEC

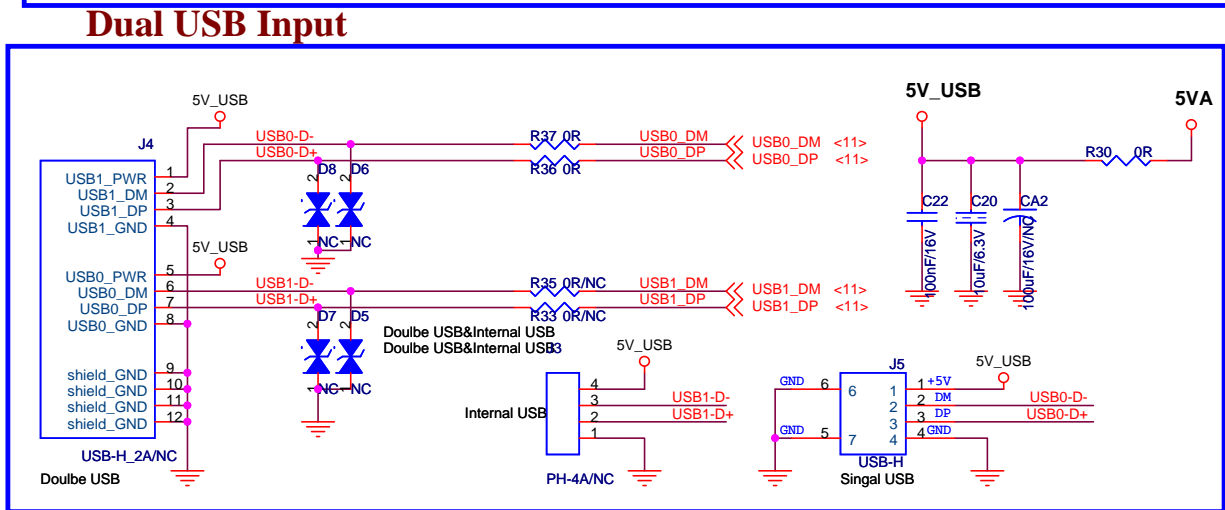
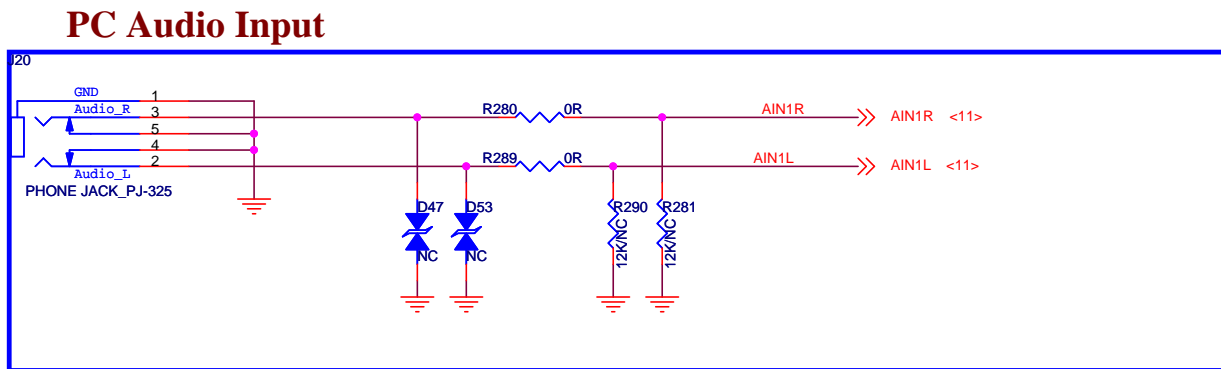
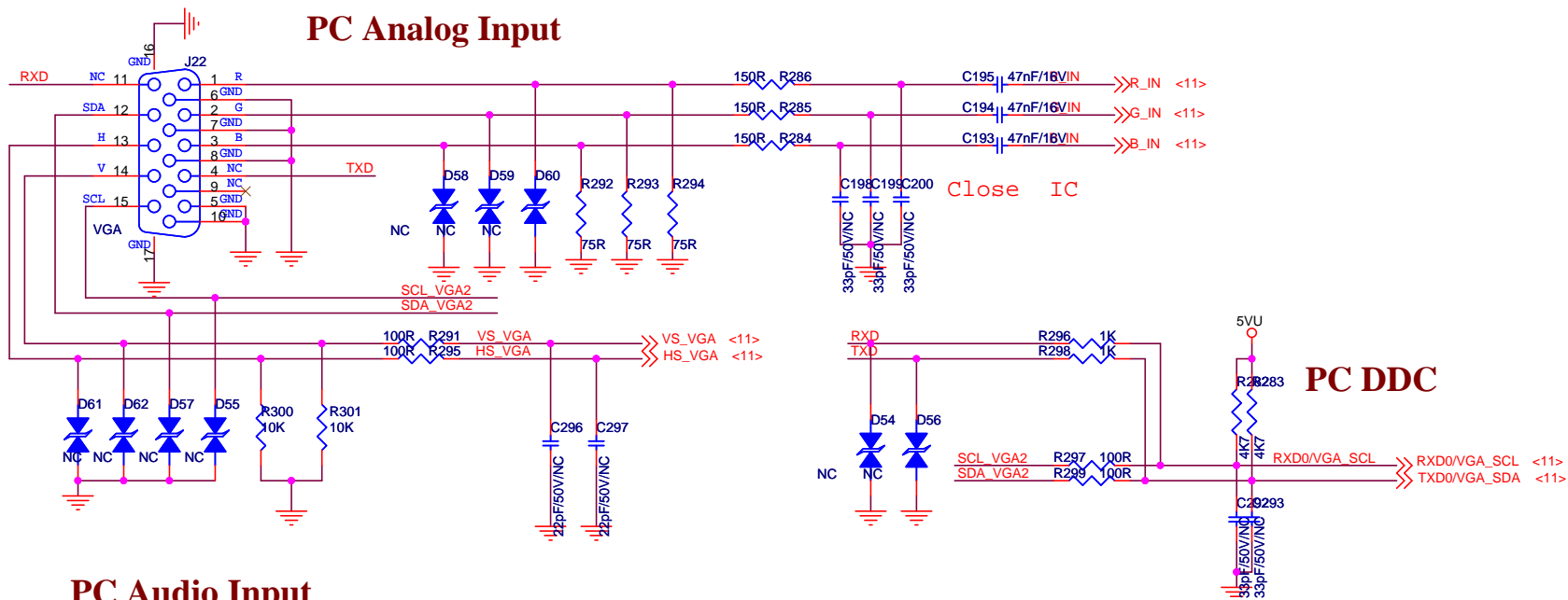



HDMI PORT-C



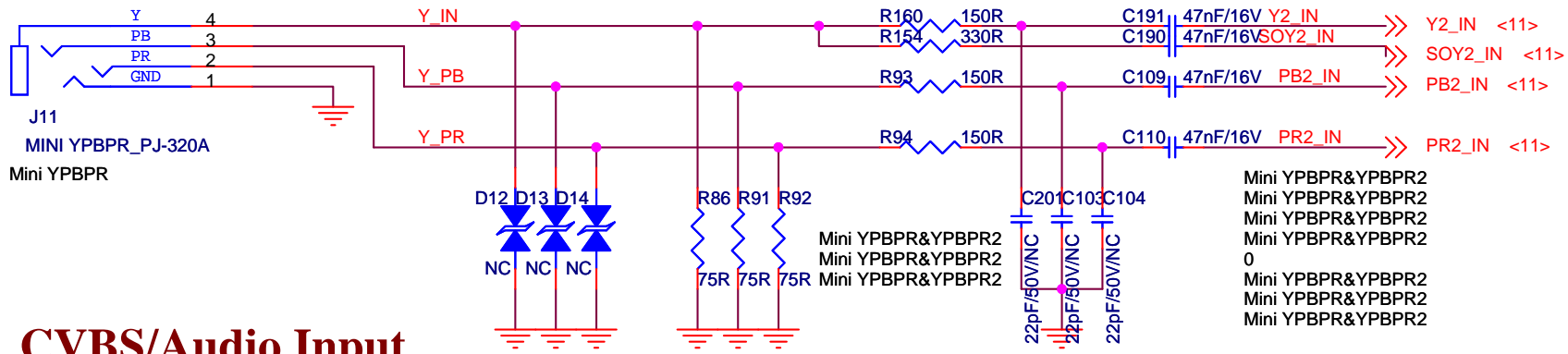
HDMI Connector



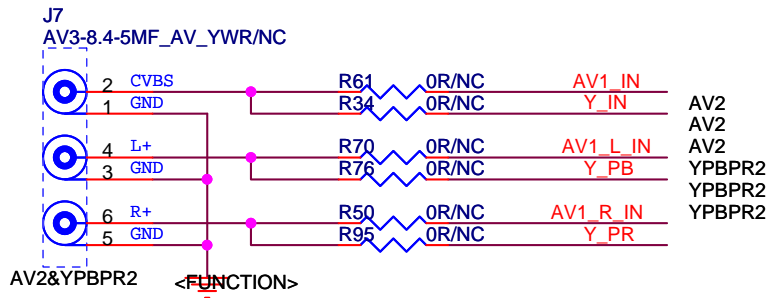


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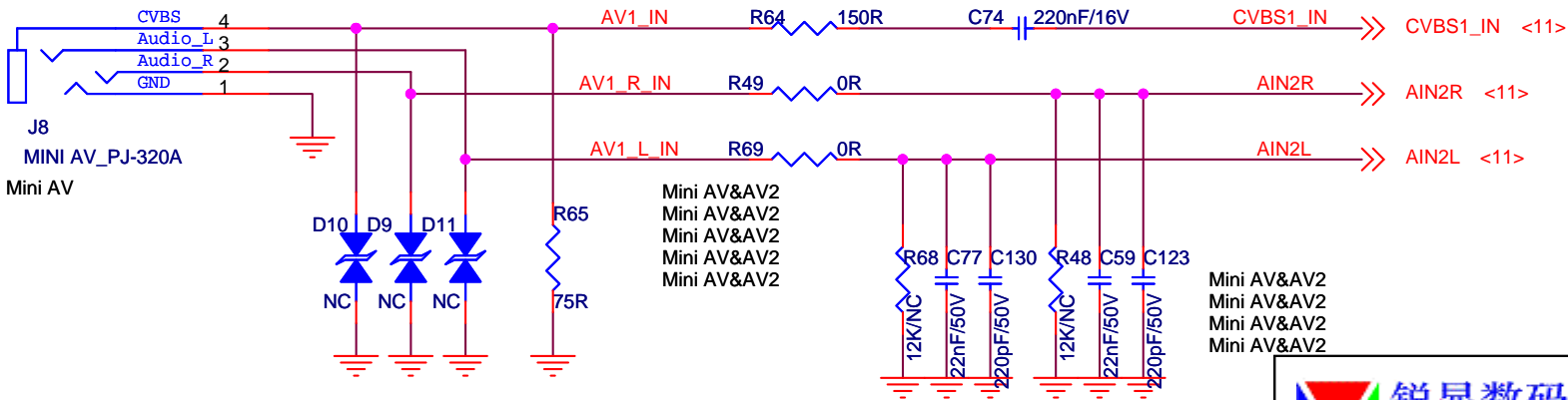
YPbPr Input



CVBS/Audio Input



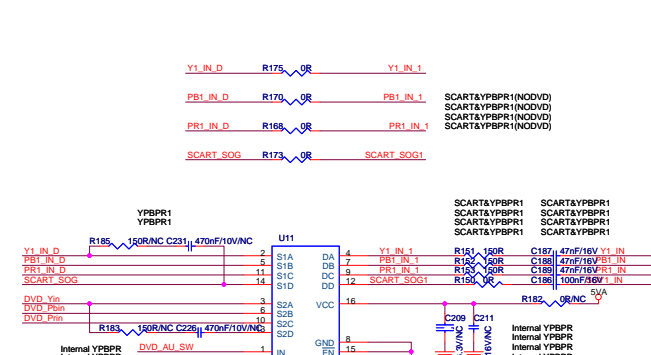
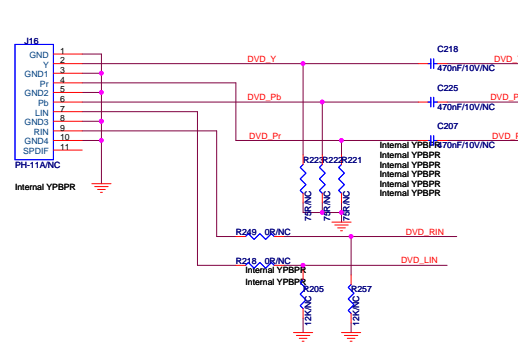
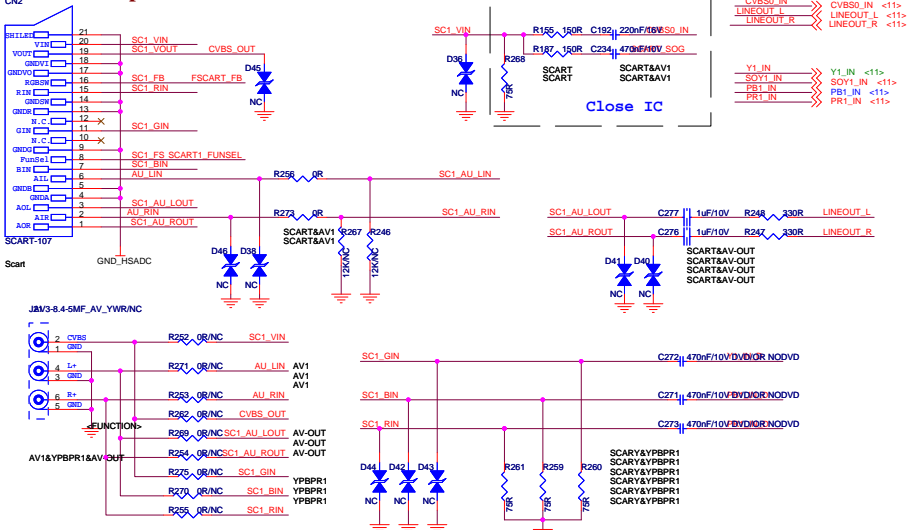
MINI AV Input



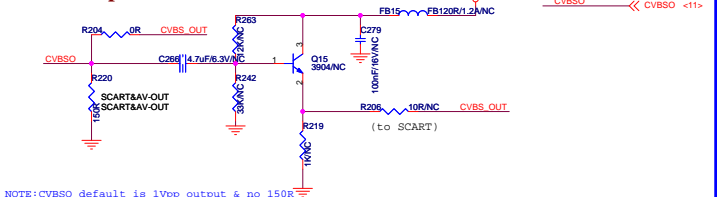
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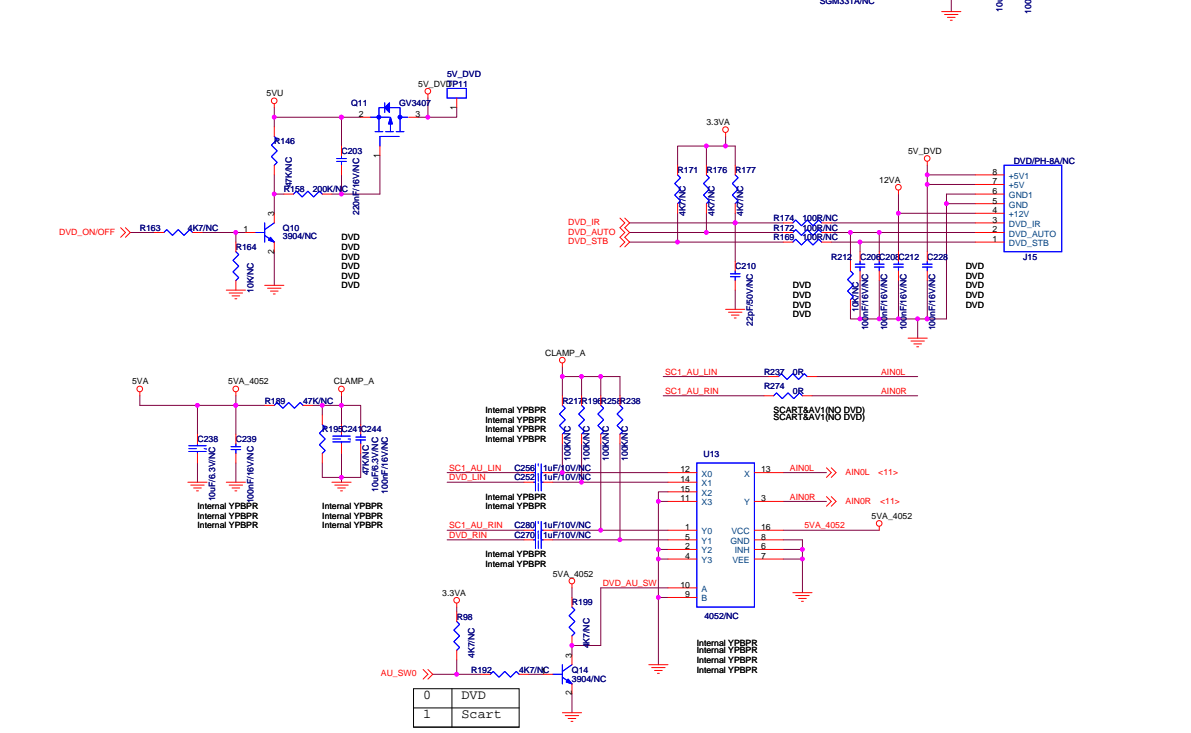
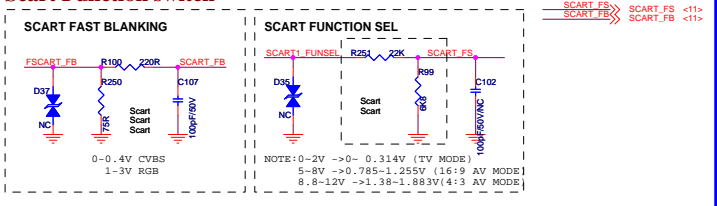
SCART1 Input



CVBS Output



Scart Function switch



CI

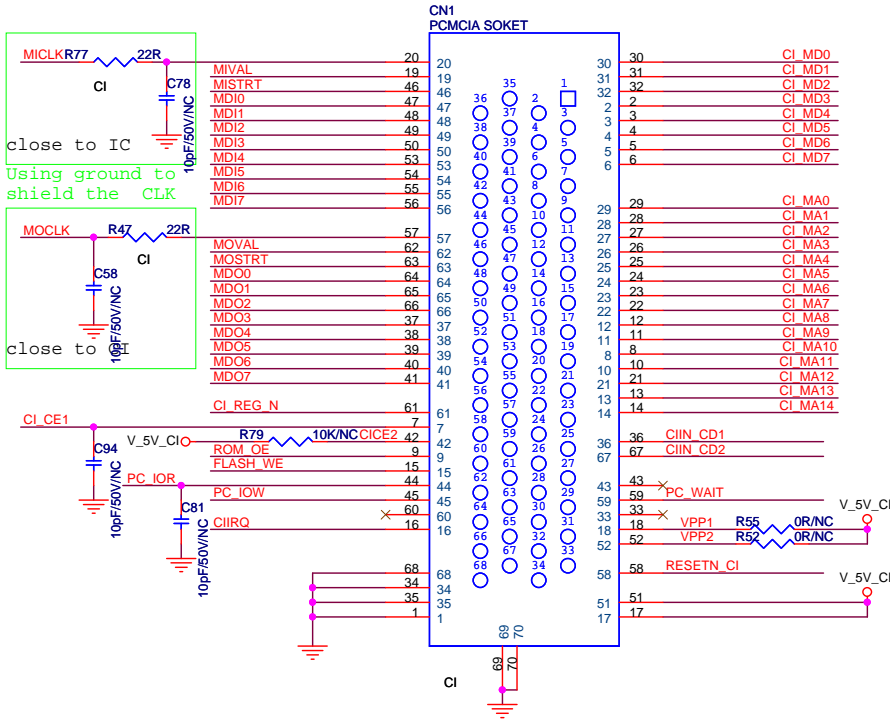
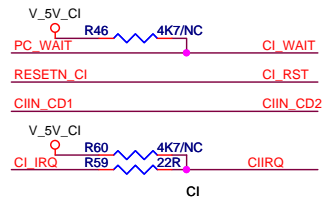
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TSO_VAL	R53 22R MIVAL
TSO_SYNC	R58 22R MISTR
CI_A11/TSO_D0	MD10
CI_A10/TSO_D1	MD11
CI_A9/TSO_D2	MD12
CI_A8/TSO_D3	MD13
CI_A7/TSO_D4	MD14
CI_A6/TSO_D5	MD15
CI_A5/TSO_D6	MD16
CI_A4/TSO_D7	MD17

TSI_CLK	MOCLK
TSI_VAL	R44 22R MOVAL
TSI_SYNC	R43 22R MOSTRT
TSI_D0	MDO0
TSI_D1	MDO1
TSI_D2	MDO2
TSI_D3	MDO3
TSI_D4	MDO4
TSI_D5	MDO5
TSI_D6	MDO6
TSI_D7	MDO7

CI_CE	R82 22R CI_CE1
CI_OE	R80 22R ROM_OE
CI_WE	R67 22R FLASH_WE
CI_IORD	R78 22R PC_IOR
CI_IOWR	R73 22R PC_IOW

CI_MD0	CI_D0
CI_MD1	CI_D1
CI_MD2	CI_D2
CI_MD3	CI_D3
CI_MD4	CI_D4
CI_MD5	CI_D5
CI_MD6	CI_D6
CI_MD7	CI_D7

CI_MA0	CI_A0
CI_MA1	CI_A1
CI_MA2	CI_A2
CI_MA3	CI_A3
CI_MA4	CI_A4/TSO_D7
CI_MA5	CI_A5/TSO_D6
CI_MA6	CI_A6/TSO_D5
CI_MA7	CI_A7/TSO_D4
CI_MA8	CI_A8/TSO_D3
CI_MA9	CI_A9/TSO_D2
CI_MA10	CI_A10/TSO_D1
CI_MA11	CI_A11/TSO_D0



CI_D0	CI_D0 <11>
CI_D1	CI_D1 <11>
CI_D2	CI_D2 <11>
CI_D3	CI_D3 <11>
CI_D4	CI_D4 <11>
CI_D5	CI_D5 <11>
CI_D6	CI_D6 <11>
CI_D7	CI_D7 <11>

CI_A0	CI_A0 <11>
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CI_A2	CI_A2 <11>
CI_A3	CI_A3 <11>
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CI_A5/TSO_D6	CI_A5/TSO_D6 <11>
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CI_A7/TSO_D4	CI_A7/TSO_D4 <11>
CI_A8/TSO_D3	CI_A8/TSO_D3 <11>
CI_A9/TSO_D2	CI_A9/TSO_D2 <11>
CI_A10/TSO_D1	CI_A10/TSO_D1 <11>
CI_A11/TSO_D0	CI_A11/TSO_D0 <11>

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TSO_CLK	TSO_CLK <11>
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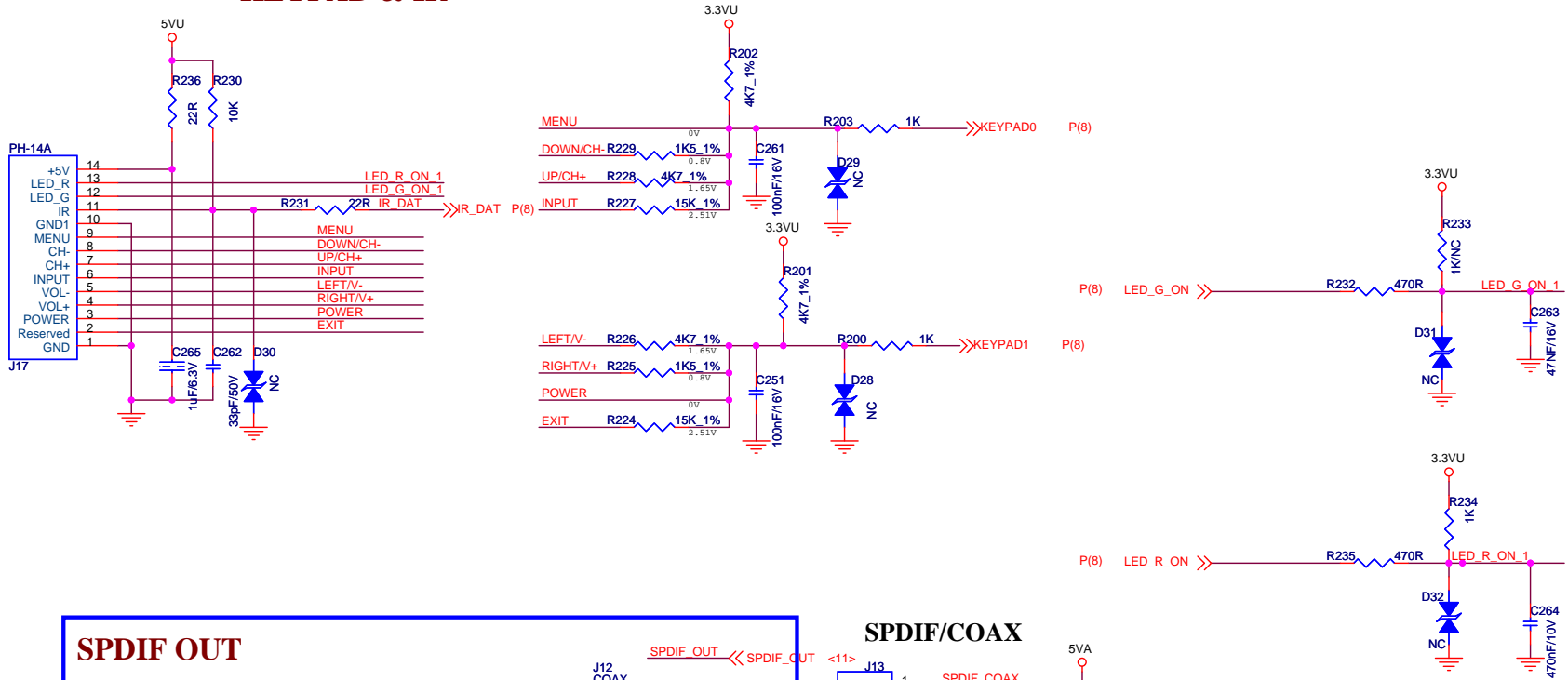
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TSI_VAL	TSI_VAL <11>

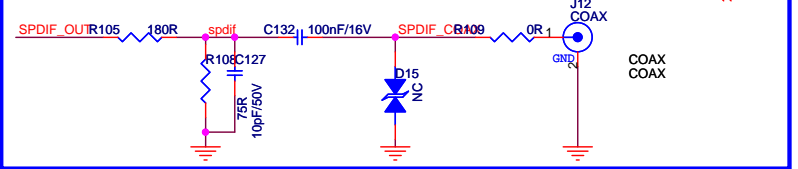
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CI_OE	CI_OE <11>
CI_IORD	CI_IORD <11>
CI_IOWR	CI_IOWR <11>
CI_WAIT	CI_WAIT <11>
CI_RST	CI_RST <11>
CI_IRQ	CI_IRQ <11>
CI_CE	CI_CE <11>

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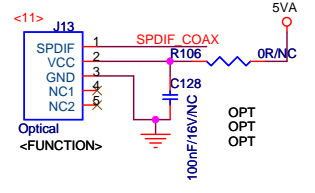
KEYPAD & IR



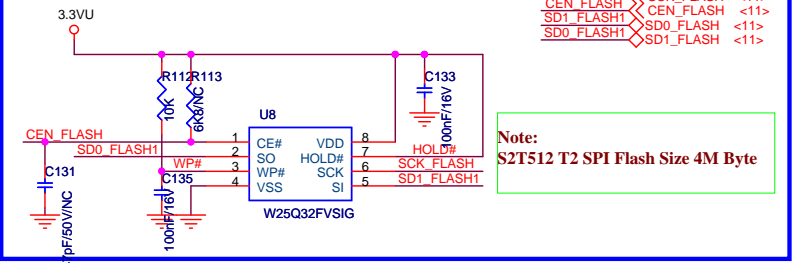
SPDIF OUT




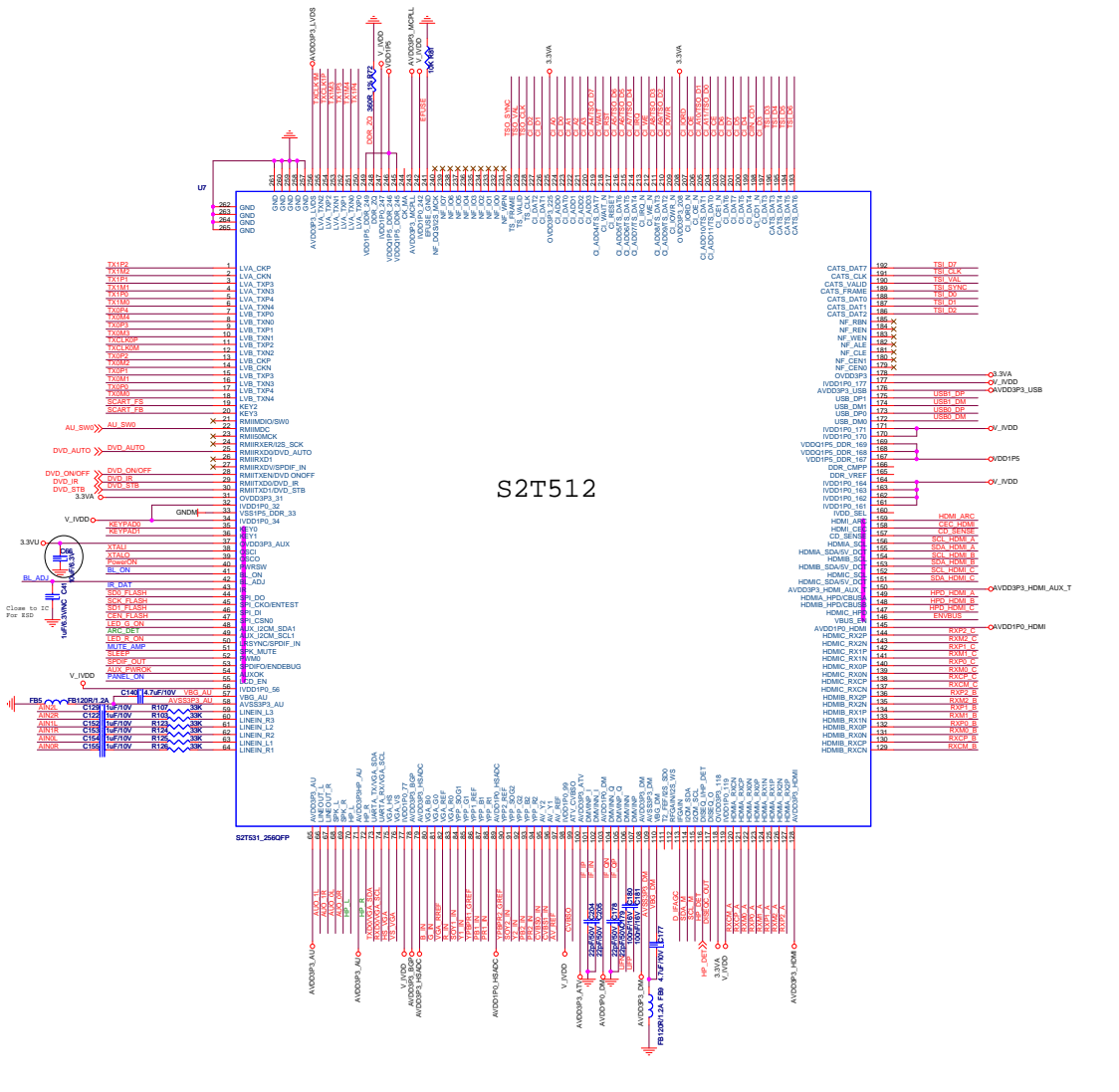
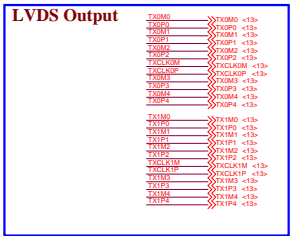
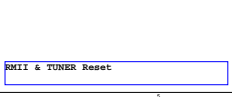
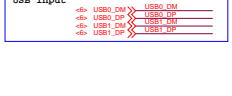
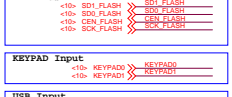
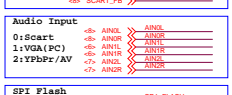
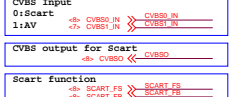
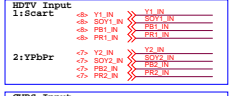
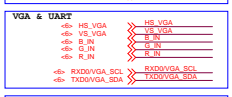
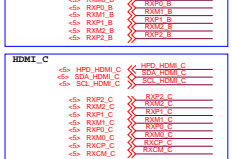
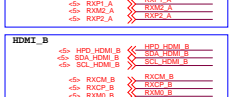
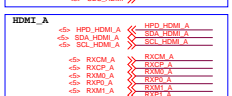
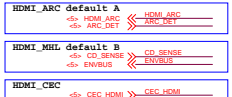
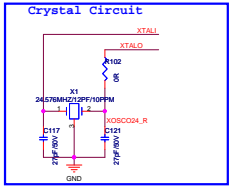
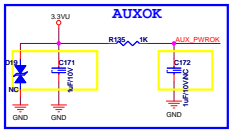
SPDIF/COAX



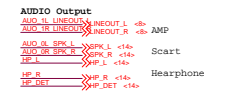
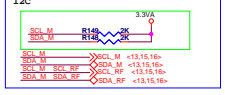
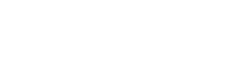
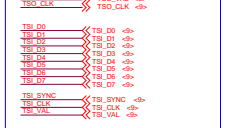
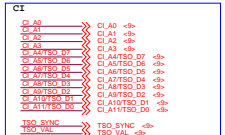
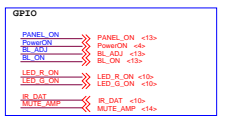
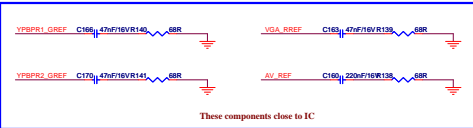
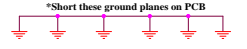
SPI Flash



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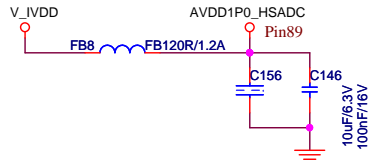


S2T512

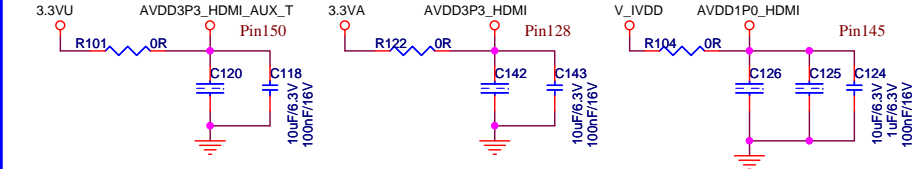


ADC POWER/GND (1.0V/3.3V)

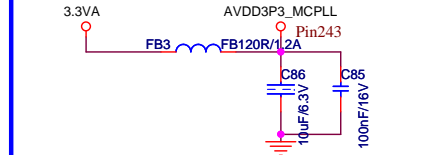
FB for ADC need $R_{dc} < 0.015$, $Z = 120/100\text{MHz}$, $I_{dc} > 3A$
 Default part MHC3216S121W



HDMI POWER/GND (1.0V/3.3V)

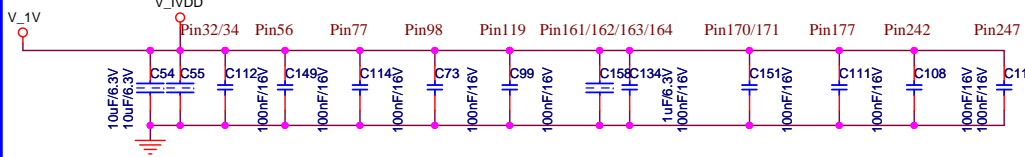


PLL POWER/GND (3.3V)

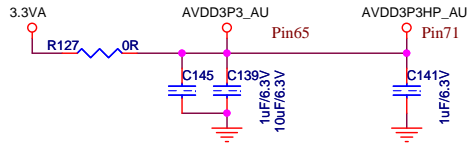


IVDD POWER (1.0V)

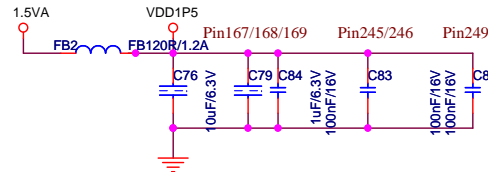
FB for CVDD need $R_{dc} < 0.015$, $Z = 120/100\text{MHz}$, $I_{dc} > 3A$
 Default part MHC3216S121W



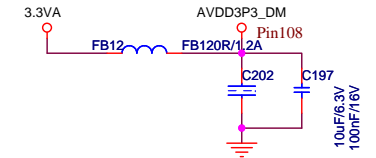
AUDIO POWER/GND (3.3V)



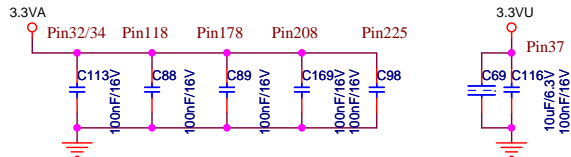
DDR POWER (1.5V)



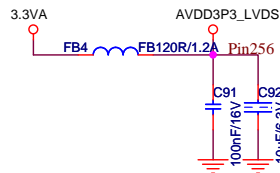
DEMOD POWER/GND (3.3V/1.0V)



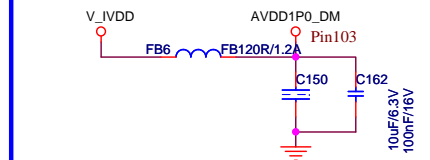
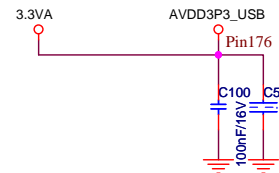
3.3V



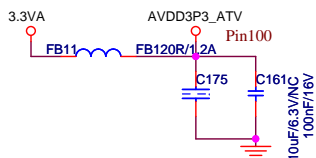
LVDS POWER/GND (3.3V)



USB POWER/GND (3.3V)



ATV POWER/GND (3.3V)

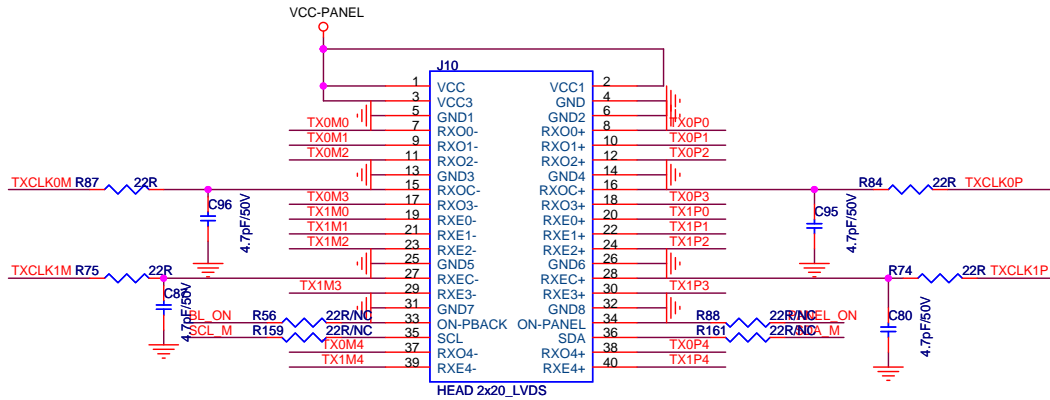


ALL FB except ADC, CVDD : need $R_{dc} < 0.2$, $Z = 300/100\text{MHz}$, $I_{dc} > 500\text{mA}$
 Default part : MCB2012S301H



*Short these ground planes on PCB

Panel Interface



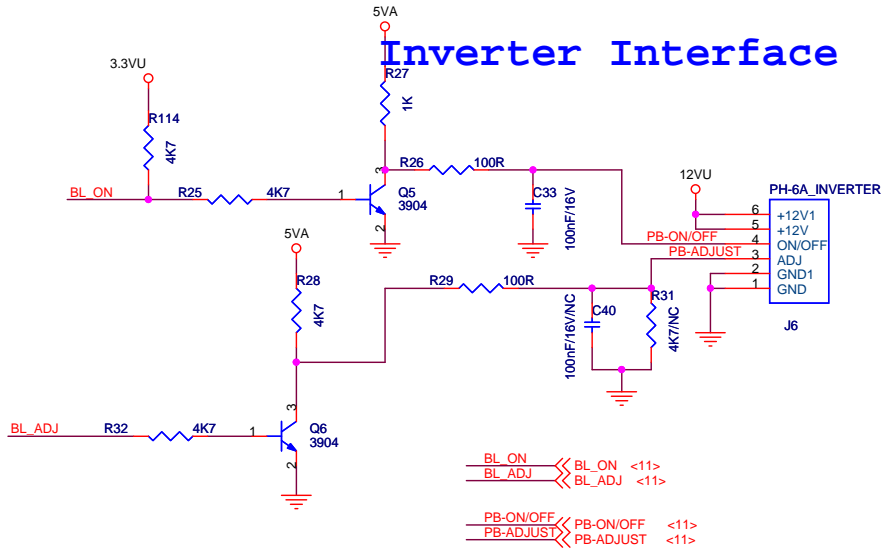
- TX0M4 << TX0M4 <11>
- TX0P4 << TX0P4 <11>
- TX0M3 << TX0M3 <11>
- TX0P3 << TX0P3 <11>
- TXCLK0M << TXCLK0M <11>
- TXCLK0P << TXCLK0P <11>
- TX0M2 << TX0M2 <11>
- TX0P2 << TX0P2 <11>
- TX0M1 << TX0M1 <11>
- TX0P1 << TX0P1 <11>
- TX0M0 << TX0M0 <11>
- TX0P0 << TX0P0 <11>

- TX1M4 << TX1M4 <11>
- TX1P4 << TX1P4 <11>
- TX1M3 << TX1M3 <11>
- TX1P3 << TX1P3 <11>
- TXCLK1M << TXCLK1M <11>
- TXCLK1P << TXCLK1P <11>
- TX1M2 << TX1M2 <11>
- TX1P2 << TX1P2 <11>
- TX1M1 << TX1M1 <11>
- TX1P1 << TX1P1 <11>
- TX1M0 << TX1M0 <11>
- TX1P0 << TX1P0 <11>

- SCL_M << SCL_M <11,15,16>
- SDA_M << SDA_M <11,15,16>

PANEL_ON << PANEL_ON <11>

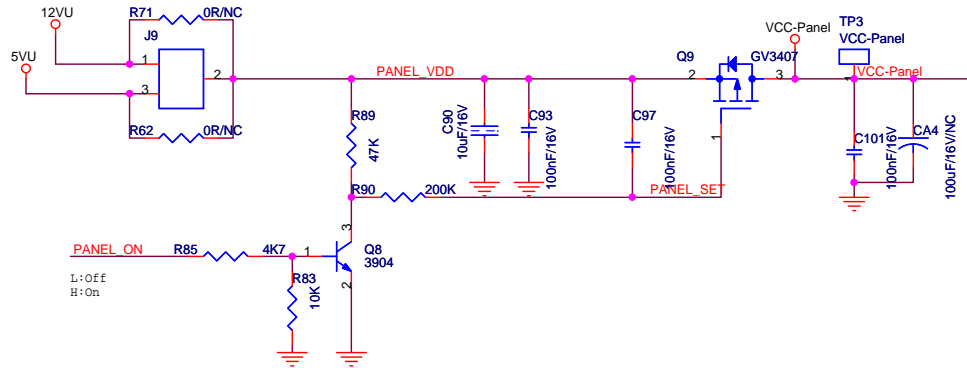
Inverter Interface



- BL_ON << BL_ON <11>
- BL_ADJ << BL_ADJ <11>

- PB-ON/OFF << PB-ON/OFF <11>
- PB-ADJUST << PB-ADJUST <11>

Panel Power Control

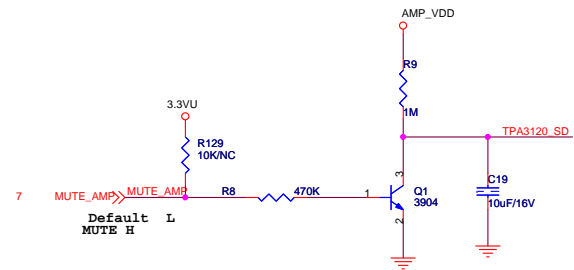
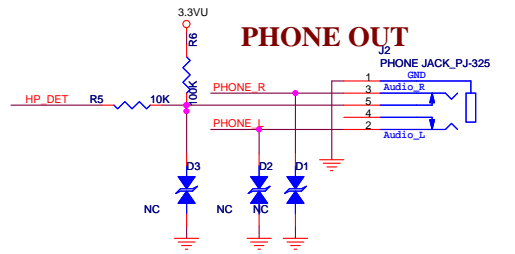
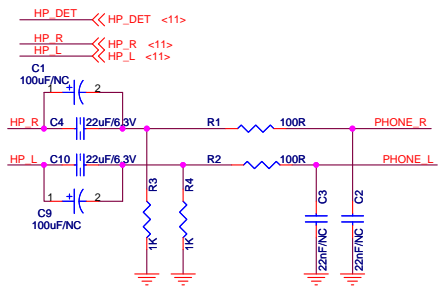
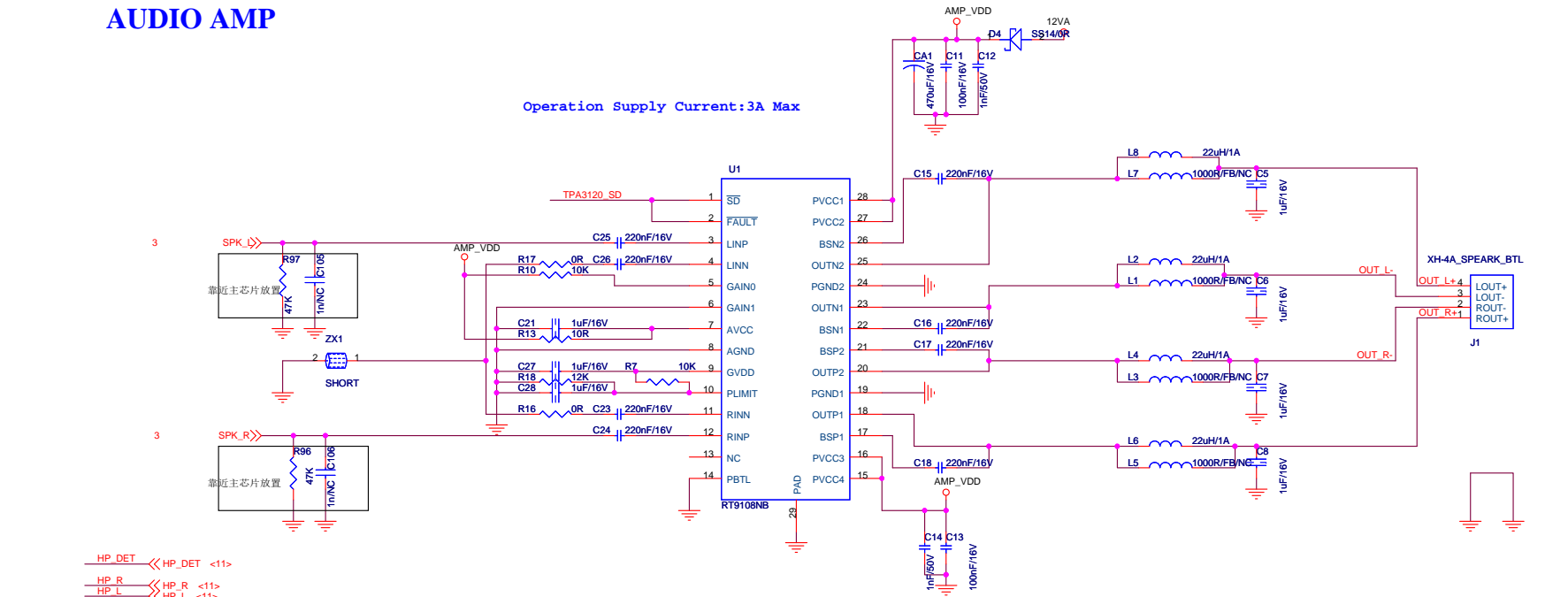


L: Off
H: On

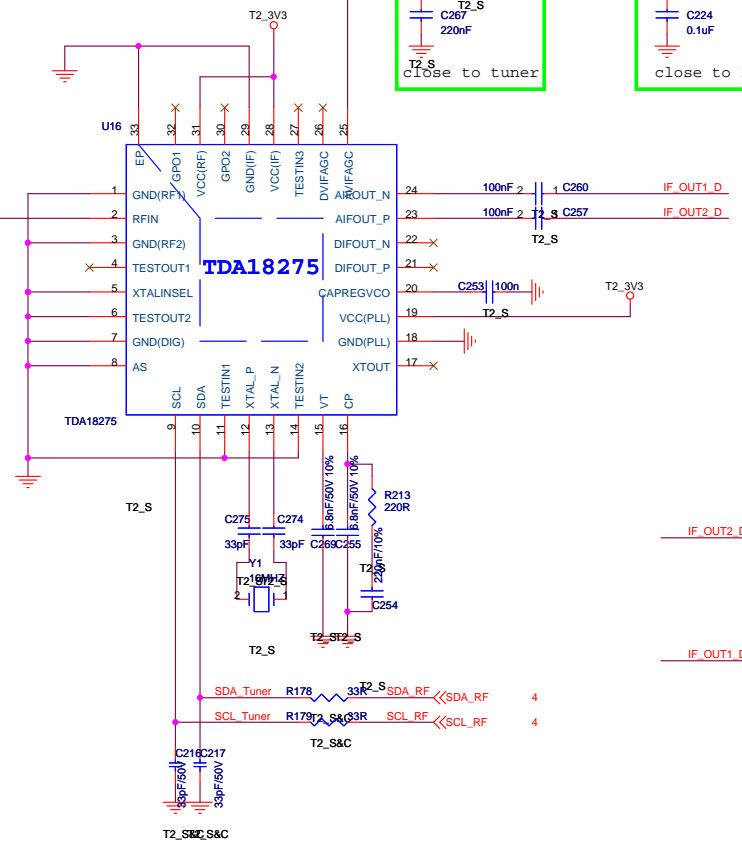
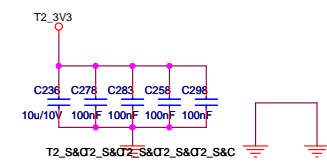
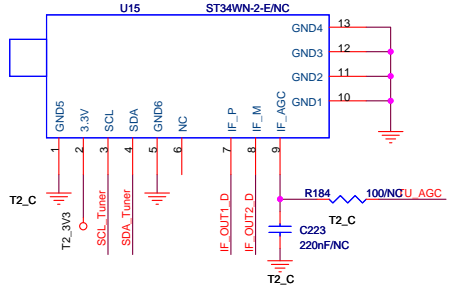
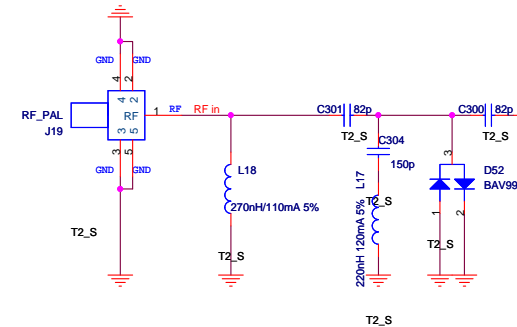
		Title	
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AUDIO AMP

Operation Supply Current: 3A Max

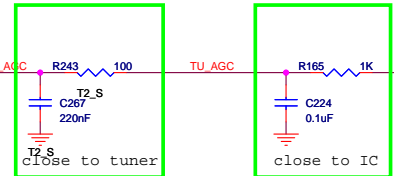


TDA18275 Circuit

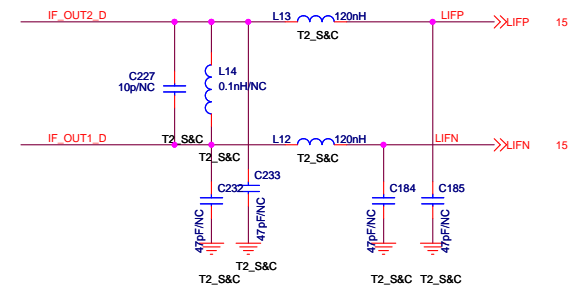
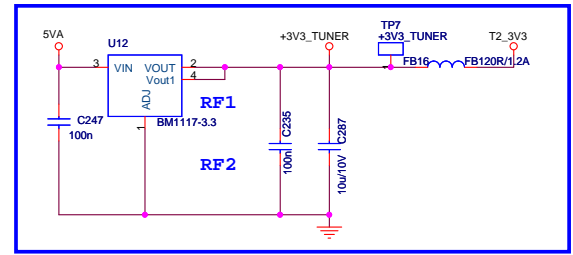


I2C ADD:0xC0

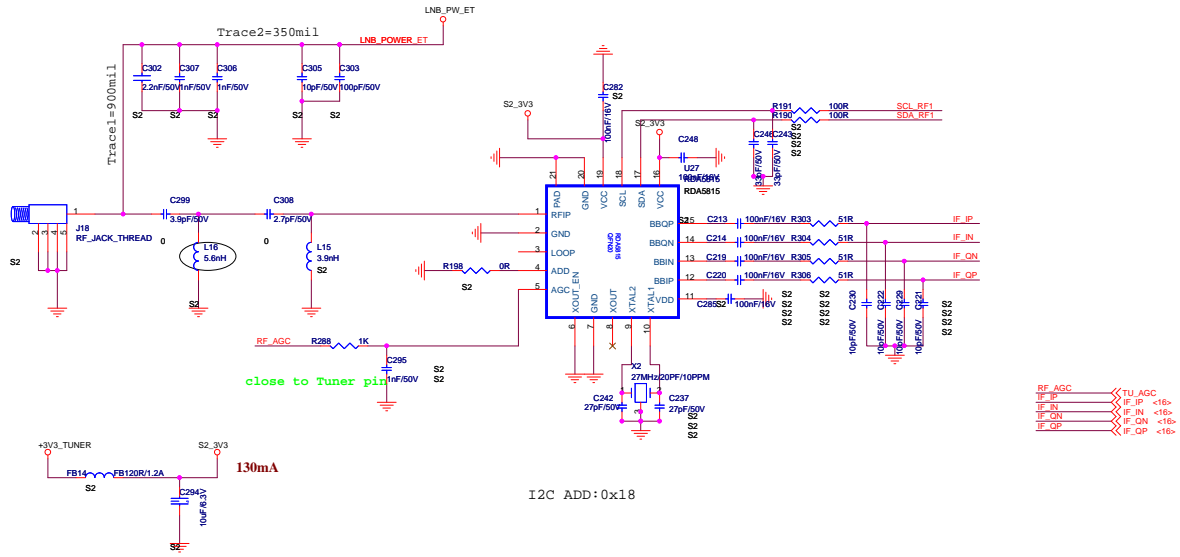
DTV IF AGC



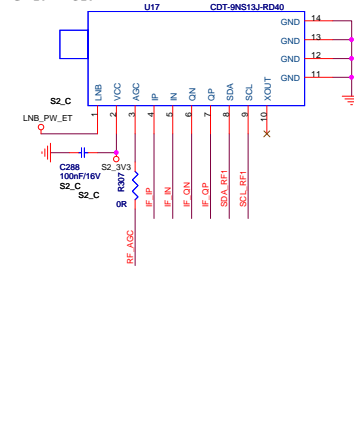
+3.3V SI-TUNER POWER



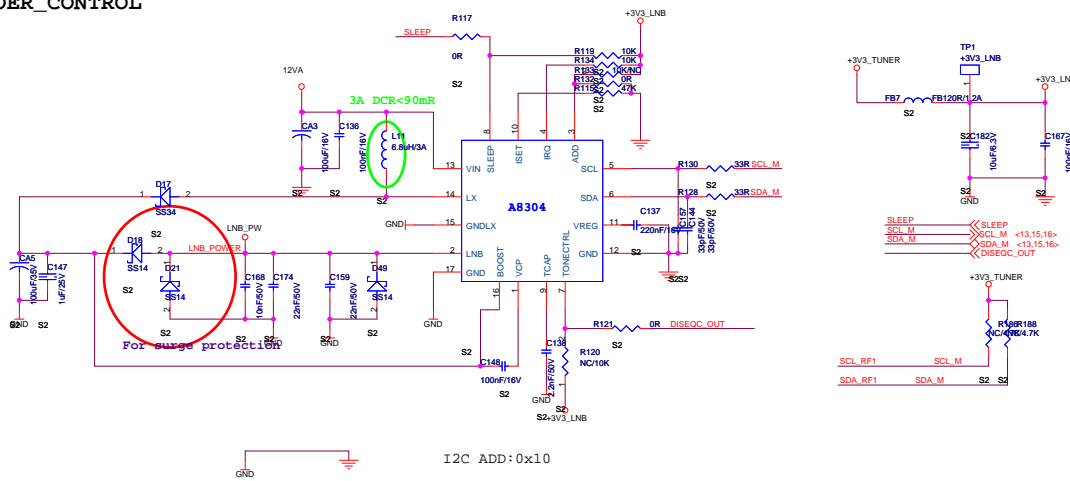
S2 SILICON TUNER

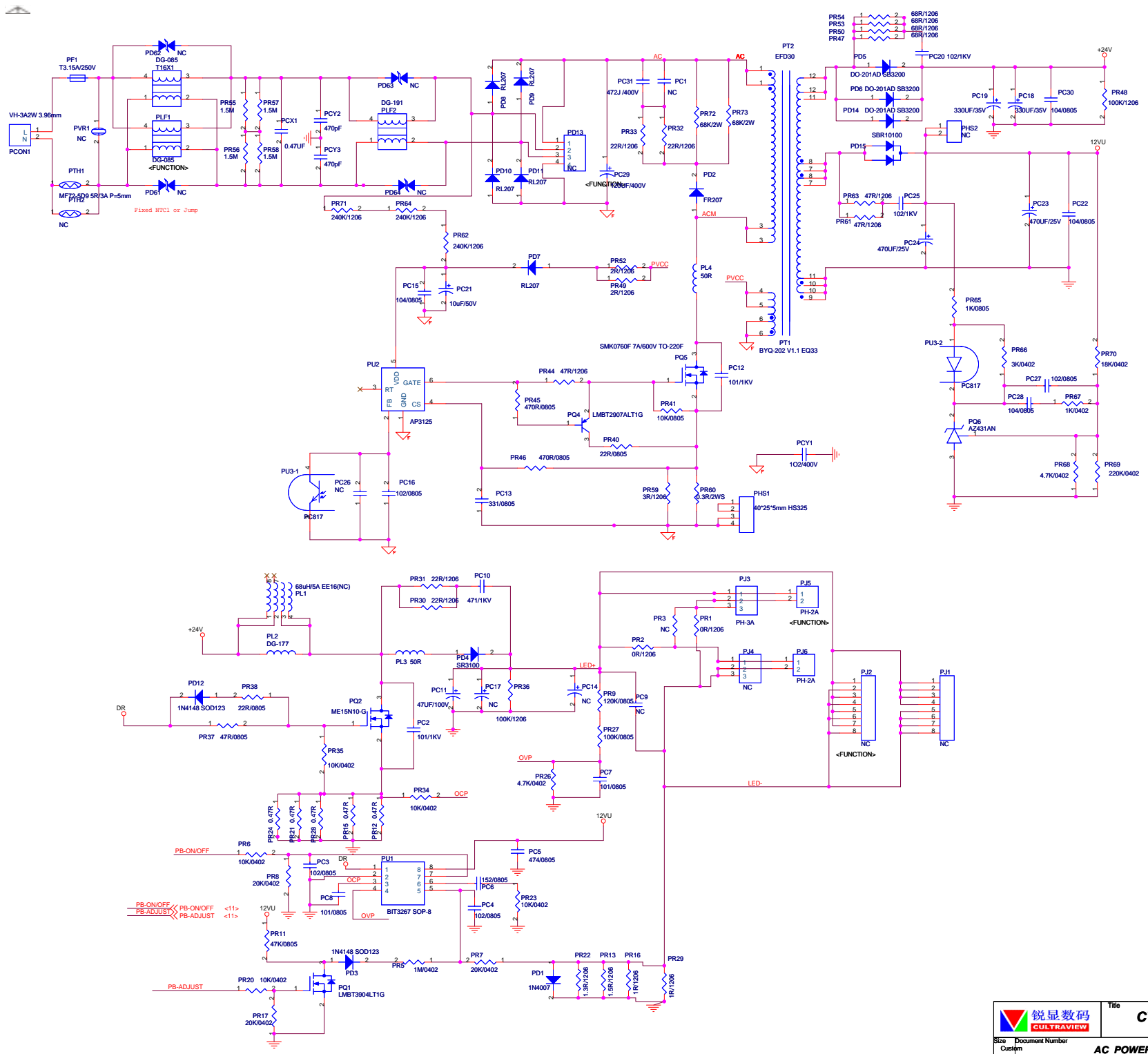


S2 CAN TUNER



LNB_POER_CONTROL



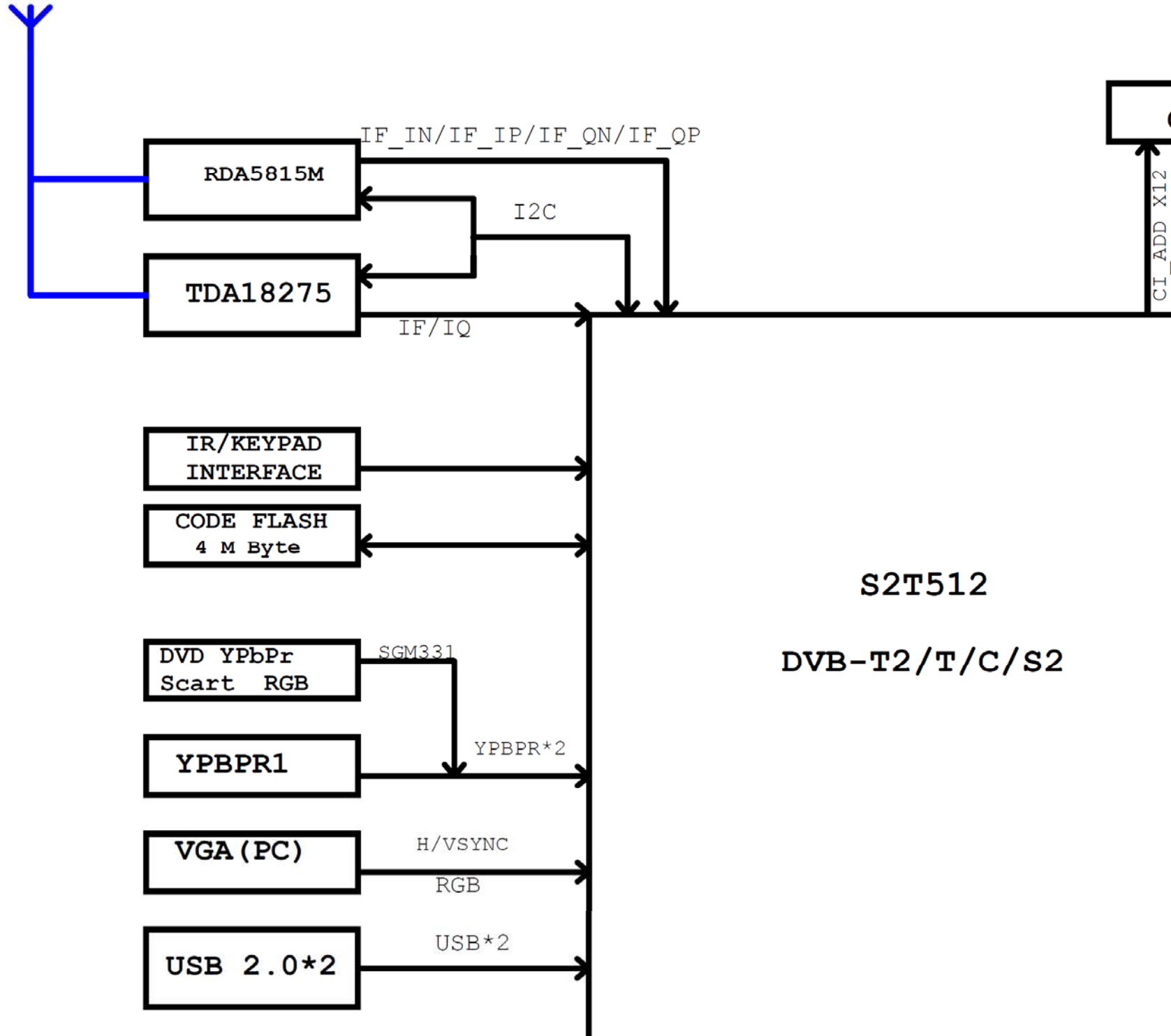


CV512H-B42

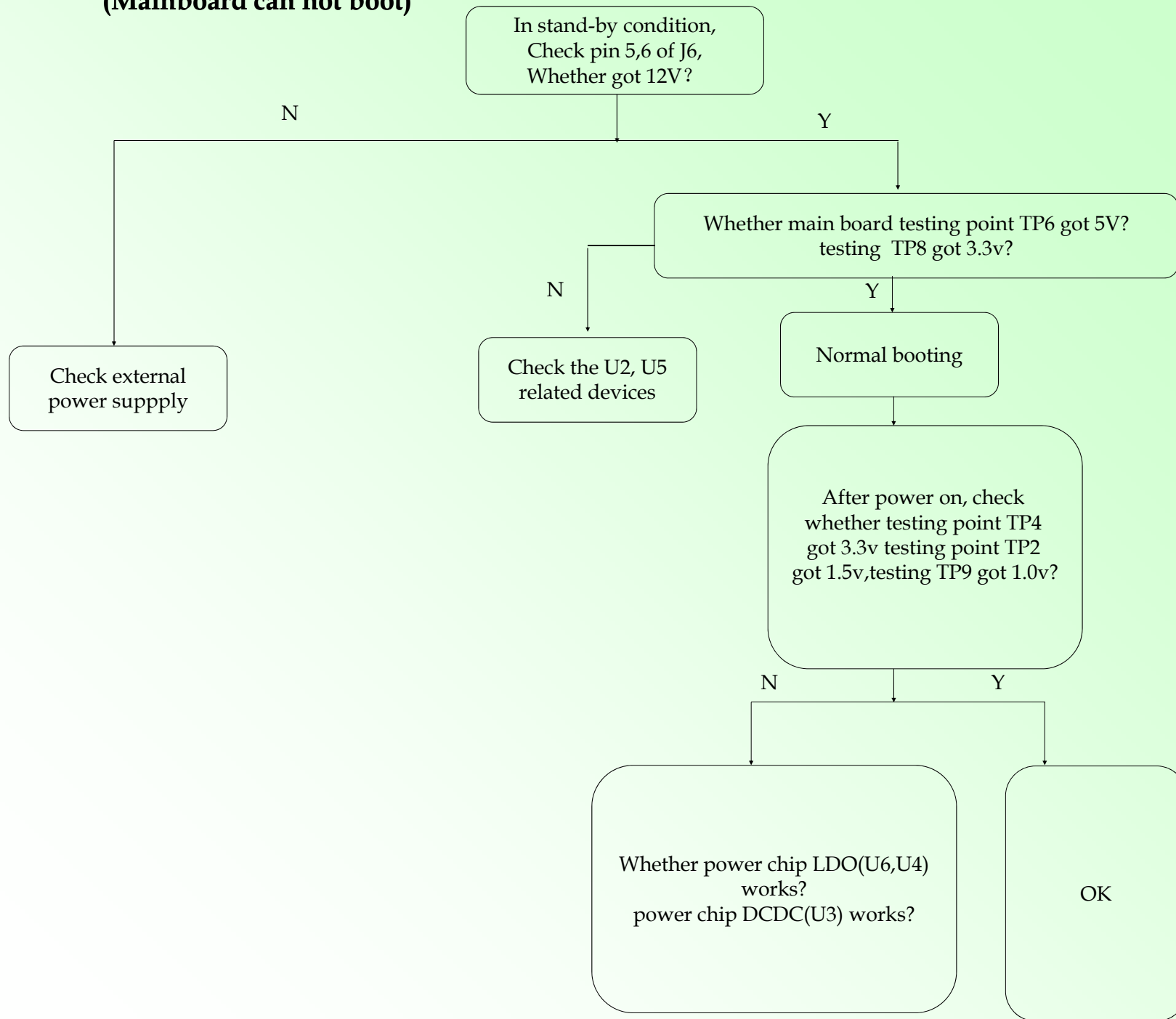
Common problems solution

- Power Unit Problem Solving**
- Display Unit Problem Solving**
- Audio Unit Problem Solving**
- Functional Unit Problem Solving**

ANTENNA

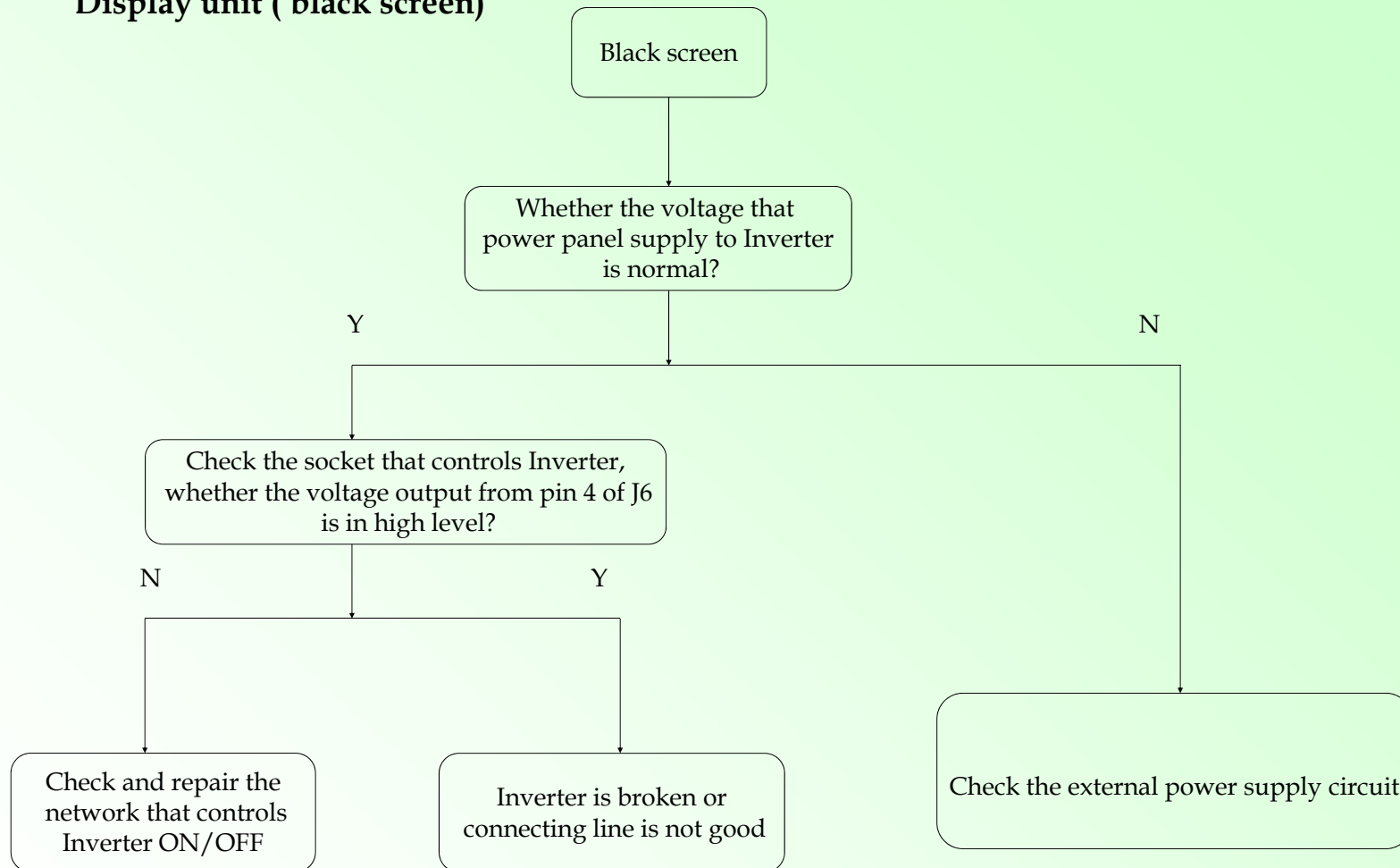


Picture 1: Power Units Problem Solving (Mainboard can not boot)

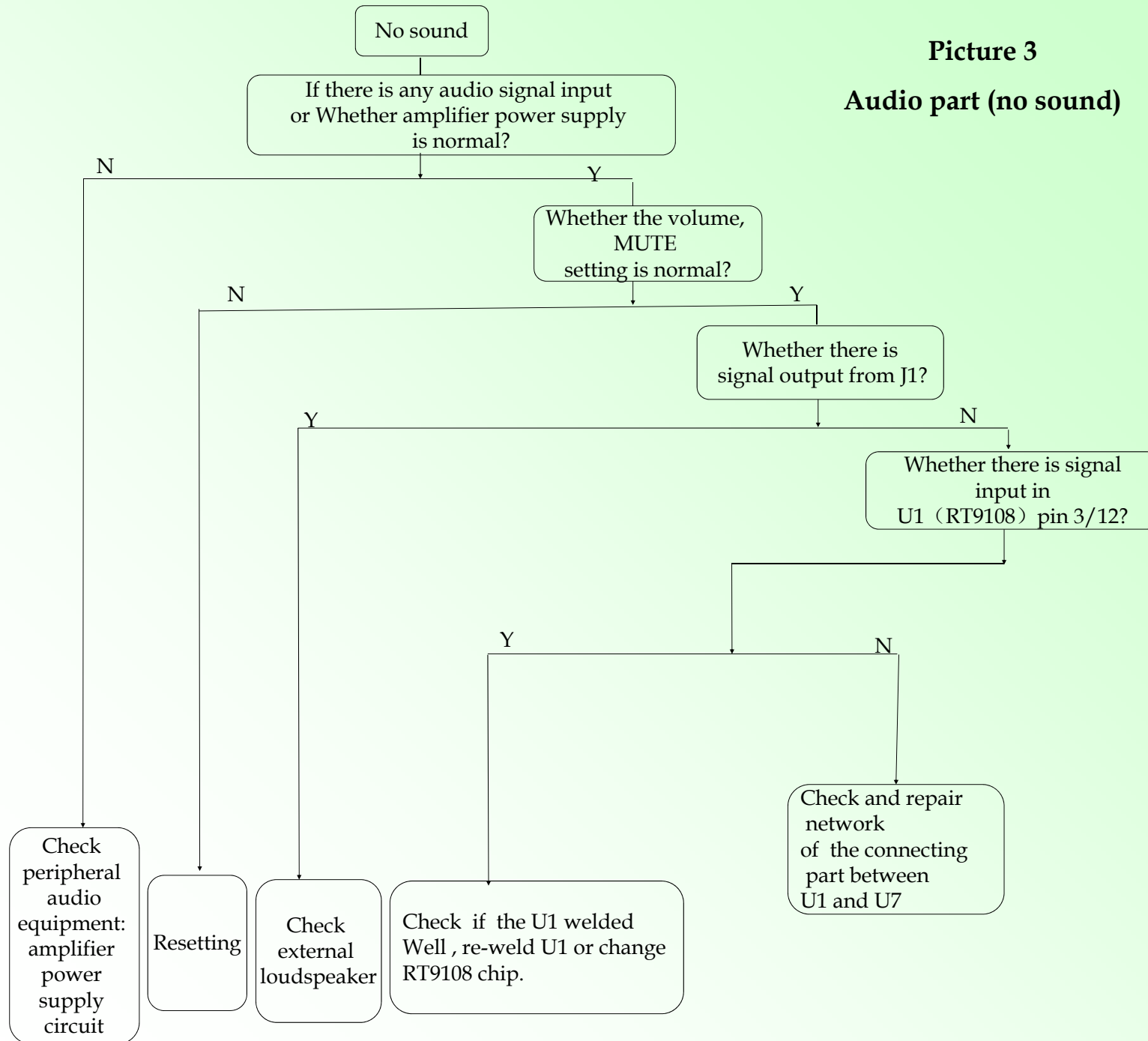


Picture 2

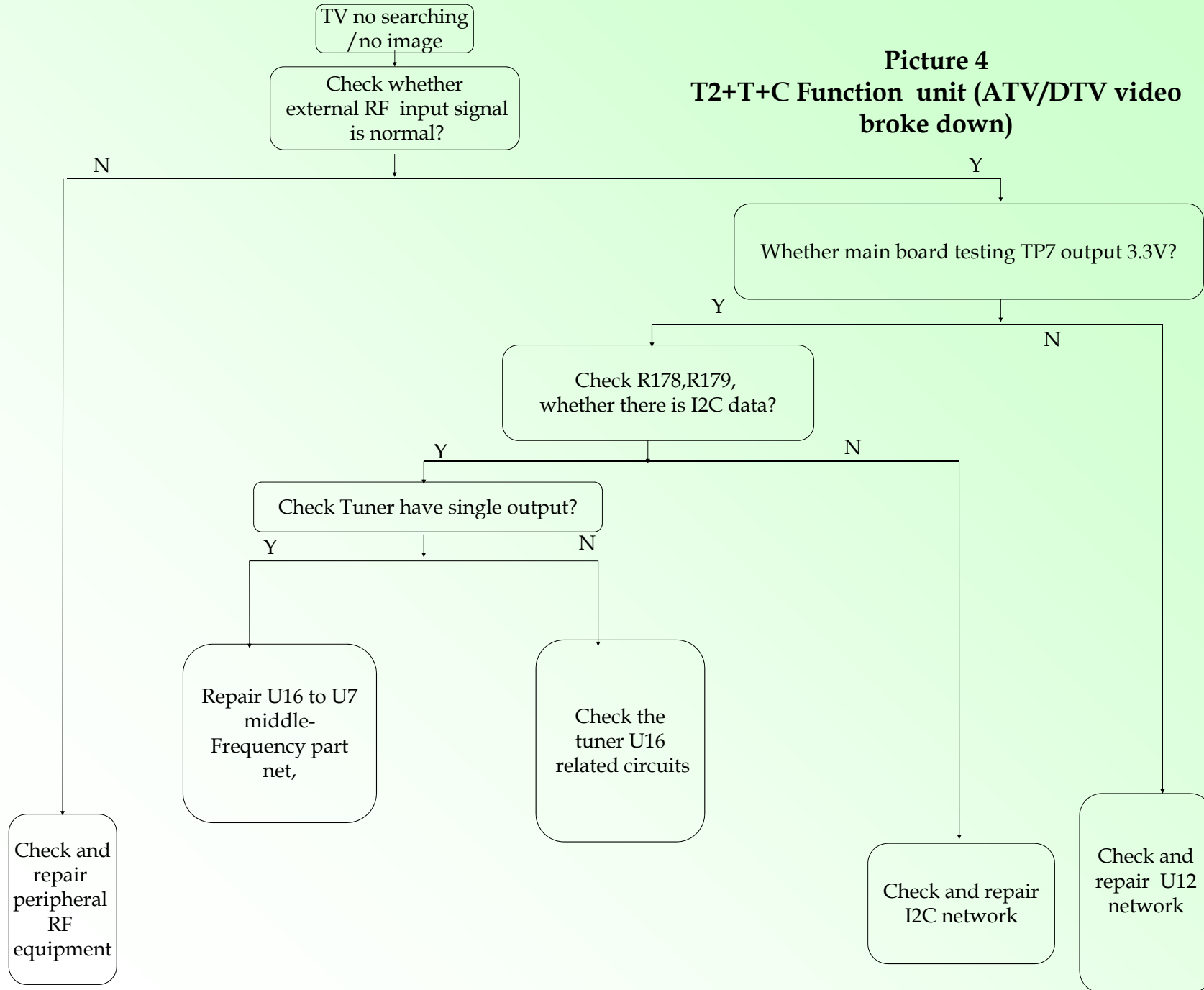
Display unit (black screen)



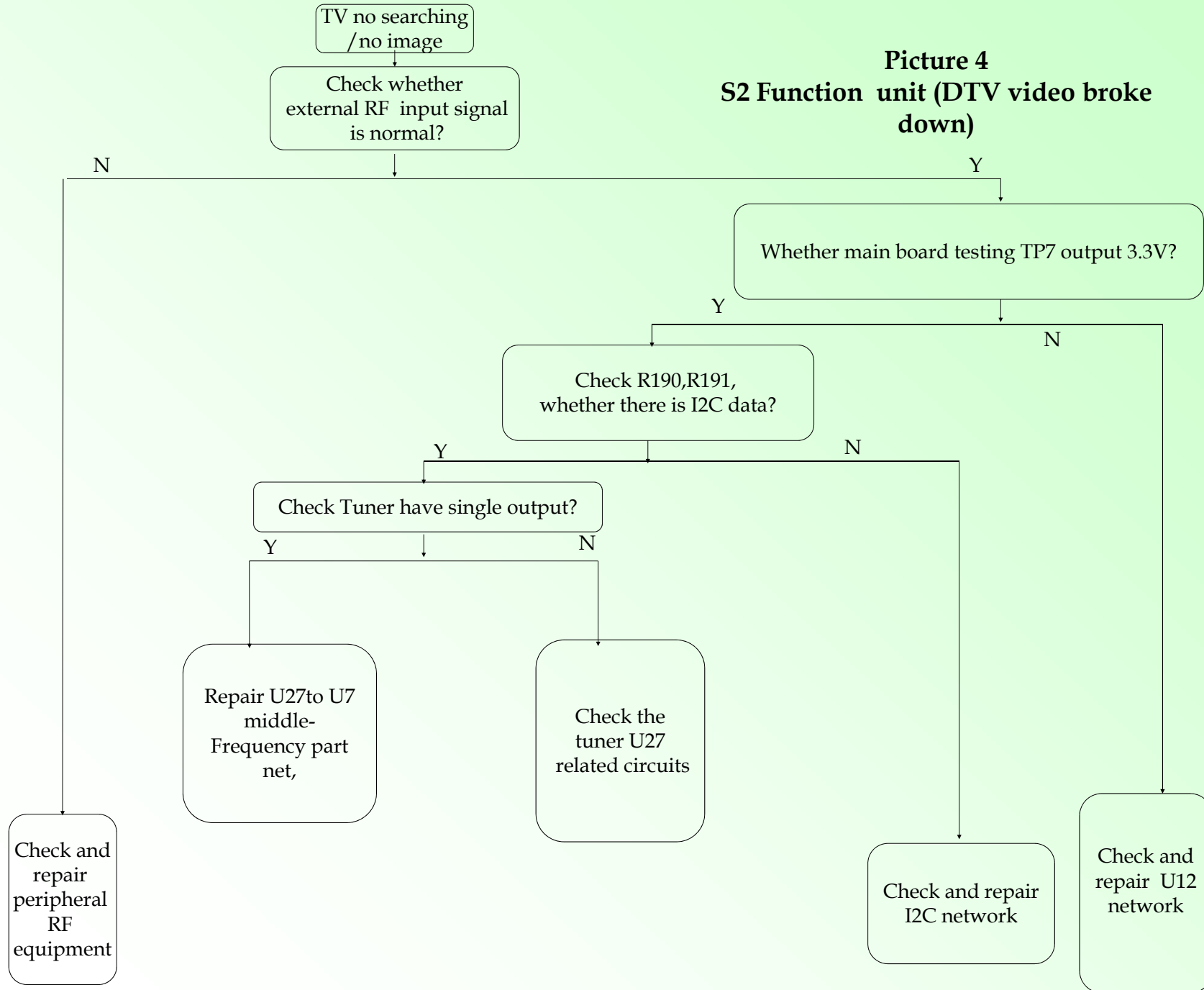
Picture 3
Audio part (no sound)



Picture 4
T2+T+C Function unit (ATV/DTV video broke down)

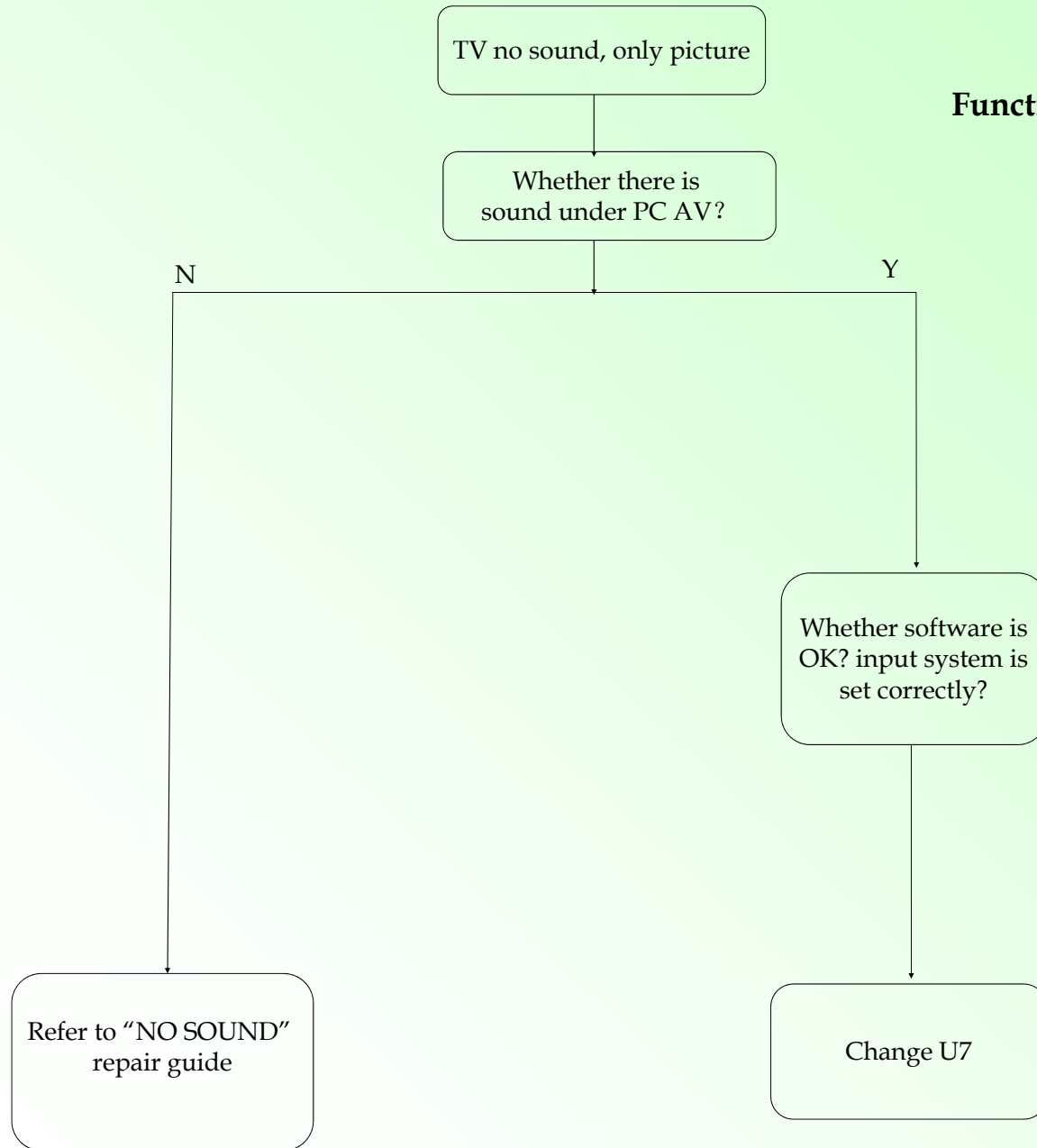


Picture 4
S2 Function unit (DTV video broke down)



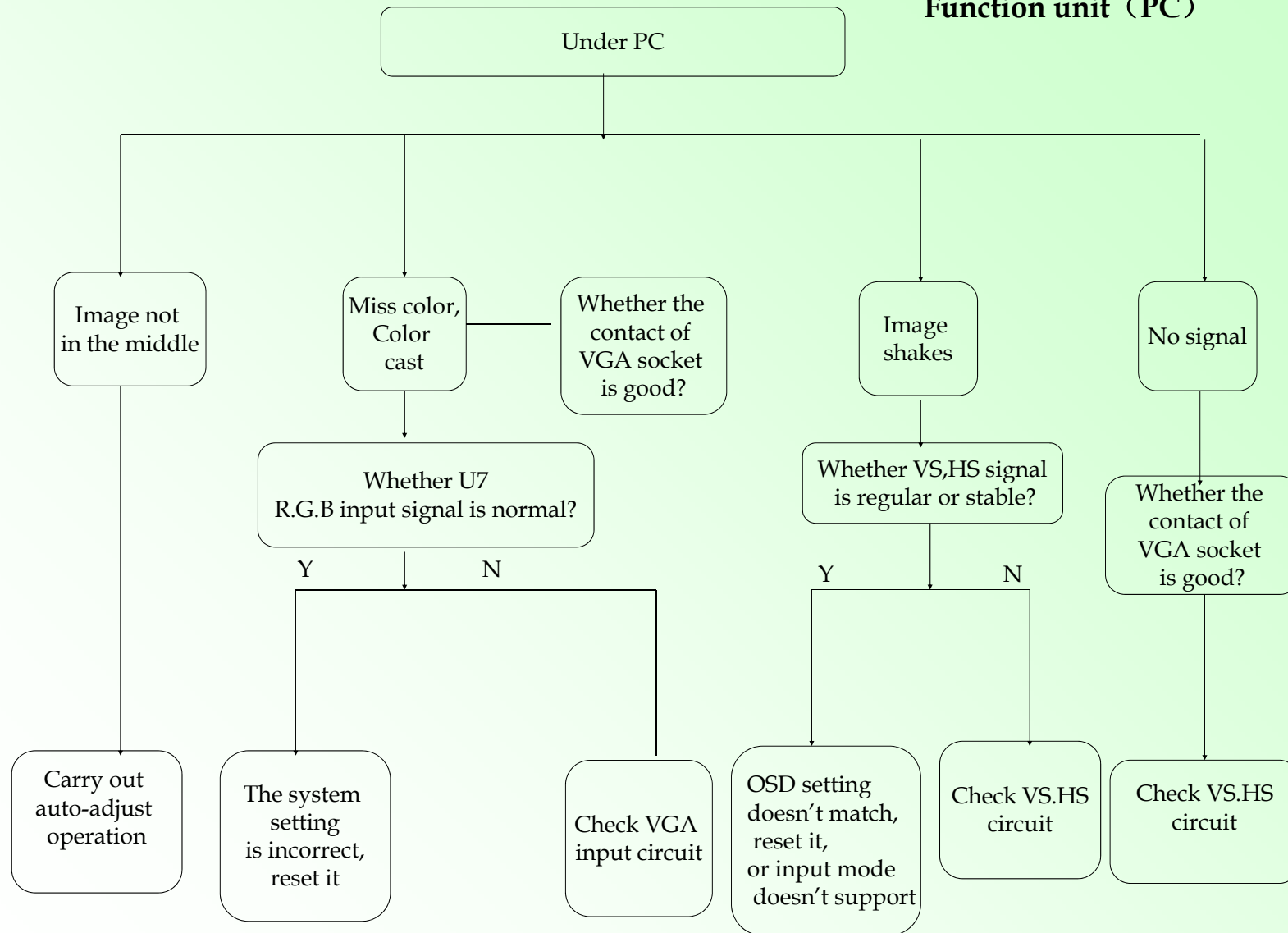
Picture 5

Function unit (ATV/DTV no sound)



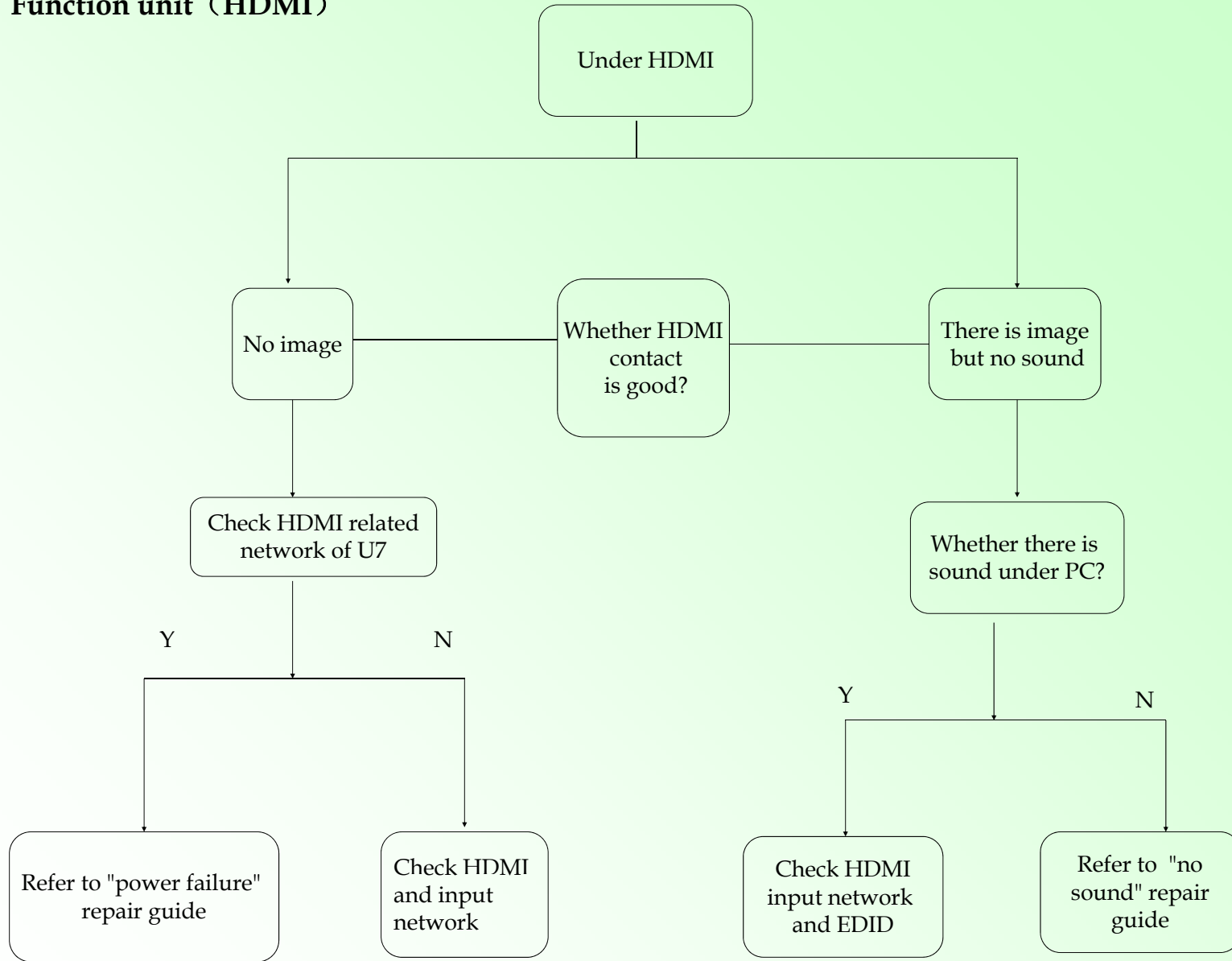
Picture 6

Function unit (PC)



Picture 7

Function unit (HDMI)



Picture 8

Function unit (MHL)

